The Iron Ag

A Review of the Hardware, Iron and Metal Trades.

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Steam Shears.

The accompanying illustration represents a heavy shear built by Messrs. Breuer, Schumacher & Co., of Kalk, near Cologne. As will be seen from the engraving, the machine is intended for the heavy work of steel makers and others who need the most powerful machinery of the kind. The gearing is placed in the center of a box frame well stiffened, at the side of which the shears are located. At the side or end next the observer the engines are placed, the the observer the engines are placed, the steam cylinders being at the bottom. The crank-shaft is common to both, and carries a very heavy fly-wheel; also the spur wheels by which the large gears are driven. wheels by which the large gears are driven. The pillow blocks are carried by brackets on the side of the frame, to the bottom of which the castings forming the guides are bolted. The cranks are not of the disk pattern, but carry eccentric disks, which we judge are used to balance the weight of the judge are used to balance the weight of the cranks. The cylinders are 16 inches stroke and 12 inches bore. The bearings are of bronze and are 6½ inches long, thus giving a very good bearing surface. The eccentrics are placed just inside these bearings, and drive the valves through straight connecting rods and valve stems. To accomplish this, it is necessary to make the steam passages vary long, and place the valves at some discountered. very long, and place the valves at some dis-tance from the cylinders. The guides are of a form quite common in American portable engines, both being cast in one piece, and we judge are finished by boring out. We have no details of the motion by which the shears are moved, but from the engraving shears are moved, but from the engraving it would seem to be a cranked arrangement of some kind. The slides are counterbalanced, and one of the weights is shown lying on the ground at the left in front of the machine. Set screws and a gib afford means for taking up wear and keeping the shears at the proper distance. The weight of the double machine is 62,000 pounds. This is reduced to 33,000 pounds when only This is reduced to 33,000 pounds when only one cylinder is put on, in which case, how-ever, the machine is of somewhat smaller ever, the machine is of somewhat smaller dimensions. An extra steam cylinder can be put on these lighter machines when desired and their power be greatly interesting as illustrating the tendency of modern tool builders to use independent engines to drive large single machines, instead of carrying power to them by means of shafts and belts.

Fuel Waste in Farnace Fires.

At the last meeting of the Engineers' Society of Western Pennsylvania, Mr. William Metcalf, of Pittsburgh, read the following

metcalf, of Fittsburgh, rend the following paper:

It is proposed to show by figures obtained by actual working data how much money is annually thrown away in Alleghony County by throwing money into our furnaces in the shape of coal, to be sent wasted out of the tops of stacks in the shape of dirty, useless smoke, and red and far more expensive flames. The data of old style furnaces are obtained from some of our ablest and most reliable iron manufacturers. The data of the new style furnaces are obtained from personal experience, and from a few iron makers who have tried and who are adopting the new style furnaces. By the old style furnace is meant the ordinary reverberatory furnace; and by the new style is meant any furnace; and by the new style is meant any good regenerative gas furnace. The data of quantities of iron made are taken from the paper of Wm. P. Shinn, on "Statistics of Pittsburgh's Manufactures," read before can Institute of Mining Engineers, 879. The price of fuel is assumed in May, 1879. The price of fuel is assumed as the probable average cost of the fuel laid down at the furnace. If the price should be too high or too low in any case, the cor-

the too high or too low in any case, the correction can easily be made for any particular mill by parties interested.

In stating that 40 bushels of coal are used in puddling a ton of iron, I am well aware that many iron men say puddling can be done, and is done, with 30 bushels per ton, but on the other hand some of the very best and most experienced men say that 40 bushels is nearer the actual figure of the amount used. Again, I have placed the quantity of ets is nearer the actual figure of the amount used. Again, I have placed the quantity of slack used in a gas furnace at 20 bushels per ton of iron, which is the highest quantity I have ever known to be used, while I do know that 15 bushels is nearer the actual consumption, and there are furnace. consumption, and there are furnaces now building which, I believe, will produce regularly a ton of muck iron with 10 bushels of slack. For the gas furnaces these figures include the consumption of fuel and wages of gasmakers from Saturday noon until Monday morning, during which time the furnaces are kept hot and are idle.

Loss by oxidation or scaling—old style, 10 per cent., 224 pounds per ton; new style, 6 per cent., 134.4 pounds per ton. Saving in iron by scaling, 89.6 pounds, equal, at 2½ cents a pound, to \$2.24. This gives us: Mr. Shinn's paper gives the quantity of rolled iron produced in Allegheny County in 1878 as 252,083 tons of 2240 pounds. Assuming this, and multiplying by the figures just given, we have:

Loss in puddling—252,083 multiplied by \$1.38 equals \$347,874.54.

\$60000, showed a daily saving of \$50, or about \$\frac{1}{5}\$ (5,0000 per year, and of another case where the gas system was only partially in use, where there was a saving in the total annual fuel bills per ton of product of 46 per cent. Several questions will naturally occur—as, What is the wear and tear? How much fix does the new style furnace consume? What

account. These figures are erroneous and fairly open to criticism; yet I know of one instance where a careful record of several gas furnaces which cost from \$10,000 to \$15,000 showed that each [furnace paid for itself every year, and in another case where a furnace which is not so well arranged as it ought to be, and which cost less than \$6000, showed a daily saving of \$56, or about the men that they naturally do much better work, because their labor is not so exhaust-

want to be understood as claiming to be, in the works with which I am connected, in advance of the rest of the world. We still use some of the wasteful style of furnaces, and a complete emancipation from old ways is always difficult to accomplish; but we are making as rapid a development of the use of is always difficult to accomplish; but we are making as rapid a development of the use of regenerative furnaces as we can. One field for the regenerative gas system is still unoccupied. I refer to the firing of steam boilers. Some Germans have recently shown that by gas firing 90 per cent. of the fuel will evaporate double the quantity of water in a given boiler. This simply means that any concern can double its steam producing capacity at a very trifling cost, with no increase of plant. A battery of boilers is now being fitted in this city with regenerative gas fires, and if the results claimed by the Germans are realized, the facts will be laid before the society at an early day. In the mean time the subject commends itself to every one who is interested in economy and cleanliness. The economical side of the question has been shown. The cleanly side is accomplished of necessity; first in the is accomplished of necessity; first in the greater cleanliness of the works, and, secgreater cleaniness of the works, and, second, from a reduction of the smoke nuisance,
for it is well understood by all who know
how to work a gas furnace, that a smoky
stack is a sure sign of a furnace that is in
bad order; therefore smoke from a gas furnace is always inexcusable.

After the paper had been read an informal

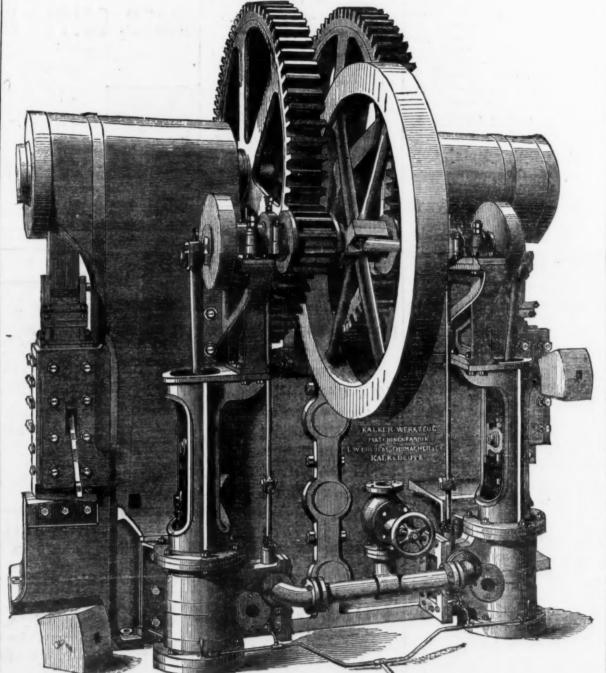
After the paper had been read an informal discussion followed. Mr. Parkins said he had found the gas system successful for welding cast steel, and Mr. Metcalf, in reply to inquiries, said that the gas could be used to the state of the stat or inquiries, said that the gas could be used profitably, even at present figures, for heating private houses, and there is no danger whatever from explosions. Mr. Hunt stated hat there was danger of explosions only where a gas made from sawdust is used, as in Sweden. On motion of Mr. Millar, of the Atlas Works, the subject was continued to the next meeting.

The Law of Corporations.

In the case of Jacob Lorillard as appellant, decision of importance in reference to the organization of corporations under the statutes of this State. In June, 1874, Jacob Lorillard and the firm of William P. Clyde & Co. were competitors in the transportation Pulladelphia, each owning vessels engaged in that business. They then entered into an agreement to consolidate the business of both under a corporate management accoring to the laws of the State, with a capital f \$300,000, to be represented by vessels belonging to each, at a valuation agreed to and amounting in the aggregate to \$300,000, each to receive half the amount of the stock and Clyde & Co. to have the management of the corporation, guaranteeing that Mr. Lorillard should have dividends amounting to at least 7 per cent on the amount of his stock. The plaintiff brought a suit to recover from the successors of Clyde & Co. two years' dividends under the agreement. The defendants demurred to the complaint, being that the field in the complaint, claiming that it did not constitute a cause of action on three grounds—first, that the agreement was illegal in that only five persons formed the corporation instead of seven, as required by statute; second, in that the agreement provided that the property shall be taken to represent capital at a valuation fixed by the parties; and third, that the stipulation in the contract vesting the management of the corporation in William Clyde & Co. was against put and rendered the contract illegal, because it was an attempt to provide in advance for the control of the corporate affairs and withdraw it from the trustees and stock-holders, to whom it properly belonged. The complaint was dismissed and the case was carried on appeal to the Court of Appeals, where it was argued by Mr. Heraco Barnand on the part of the plaintiff and Mr. Tunis Bergen on behalf of the defendents.

The Court in its opinion, written by Judge Andrews and concurred in by his associates, holds on these points respectively that upon the allegation of the complaint that "the corporation was duly organized under the laws of the State, it must be assumed that the corporation was regularly organized; that it cannot be assumed that the transaction was not bona fide or that the valua-tion put on the vessels was fictitious or extravagant; that the value of the stock would depend on the value of the property and business; that the parties fixing the blonday morning, during which time the furnaces are kept hot and are idle.

For heating I have used equal quantities of cal for one style and of slack for the cher, as given by from mon, altitude and assigned that this is an error in favor the reverberactory system; but not have the fact the data of those who have made the take the data of those who have made the take the data of those who have measurement. I comparison by actual measurement. I comparison by and the Court knows of no principle of public policy which condemns an agreemen



STEAM SHEARS FOR STEEL MAKERS

An iron maker who was consulted in the matter estimated that 25 per sent. of the iron made is twice heated. Assuming for this quantity one-third of the above difference in scaling as a probable safe estimate, and all of the difference in fuel, we have:

Loss in heating, in fuel—252,083 multiplied by 33 cents equals \$83,187.39.

Loss in scaling—252,083 multiplied by \$2.29 equals \$564,665.92. Total loss, \$995,

An iron maker who was consulted in the much less in a gas furnace than in a reverbatory furnace. A careful record of our run of matter estimated that as year and the analysis of the matter estimated that as year and the analysis of the cost of a gas furnace? Will not slack increase in price? What sort of heat do you figures it is a question not worth considering in this connection; but it is a fact that men can do from 10 to 20 per cent. more work on a gas furnace than in a reverbatory furnace. A careful record of our run of a gas furnace and of the wages question, because with the above stupendous figures it is a question not worth considering in this connection; but it is a fact that men can do from 10 to 20 per cent. more work on a gas furnace than on a reverberatory. They a puddling furnace when 552 tons of muck were produced, showed that the total cost of rebuilding, including castings, bricks, fire-rolling furnace when 552 tons of muck were produced, showed that the total cost of rebuilding including castings, bricks, fire-rolling furnace when 552 tons of muck were produced, showed that the total cost of rebuilding including castings, bricks, fire-rolling furnace when 552 tons of muck were produced, showed that the total cost of rebuilding, including castings, bricks, fire-rolling furnace when 552 tons of muck were produced, showed that the total cost of rebuilding, including castings, bricks, fire-rolling furnace when 552 tons of muck were produced, showed that the total cost of rebuilding, including castings, bricks, fire-rolling furnace when 552 tons of muck were produced, showed that the total cost of rebuilding, including castings, bricks, fire-rolling furnace when 552 tons of muck were produced, showed that the total cost of rebuilding including castings, bricks, fire-rolling furnace when 552 tons of muck were produced, showed that the total cost of rebuilding furnace when 552 tons of muck were produced, showed that the total cost of rebuilding furnace when 552 tons of muck were produced.

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BY EDWARD TUCK.

(Concluded),

In addition to these pillars, there was the Brazen or Bronze Altar, another gigantic work probably weighing about 200 tons; also the Molten Sea, an immense semicircualso the Molten Sea, an immense semicircular vessel measuring 17½ feet in diameter and 8¾ feet deep, and containing 16,000 to 20,000 gallons of water, supported on a pedestal of twelve bronze oxen. We get no pedestal of twelve bronze oxen. We get no idea from the account of the size of these castings, but they must have been of suffi-cient size and strength to support the vessel, which, when filled with water, would weigh probably 100 tons

In addition to these large articles, there were a great number of smaller equally good in construction and workman thip, but a full description of these must be eleft to a further article. It is apparent that different qualities of bronze were used, for some of the articles are stated "to be of bright brass," evidently different mixtures of the alloy for the differing purposes. It is clear from the vast size of the castings that good mechanical contrivances must have en used to remove, fit up and place them in position.

These works were cast "in the Plain of These works were cast "in the Plain of Jordan, in the clay ground," or, as should be more correctly rendered, "in the depth of the clay ground between Succoth and Zarthan," showing them to have been molded in clay. Such large quantities of metal would require to be melted in a series of furnaces, in which the metal could be fused at one time, all tapped together and the metal let run into the mold. A series of such furnaces would be constructed in a sort of circle cr square, under one large dome or roof forming a chimney or tower.

forming a chimney or tower.

It is most probable that such a method was adopted in those days, as we find from Nehemiah iii, II: "Malchijah, the son of Harim, and Hashub, the son of Pahath-moab, repairing the other piece and the tower of the furnaces." This would refer to such a structure which, erested in the Plain of Jordan for the temple works, may have continued as well of president. may have continued a sort of national foundry up to the time the Jews were carried captive into Babylon. And again. restoration and consequent rebuilding of the Temple would require the same operations, and hence the repairing of the furnaces would be a necessary work. The knowledge of the art of working in

metals thus brought into Palestine by the Tyrians at the building of the Temple seems not to have afterward declined, for we find frequent references in Scripture to works of this kind. In 740 B. C. King Ahaz, visiting this kind. In 740 B. C. King Ahaz, visiting King Tiglath-plleser at Damascus, saw an altar which pleased him, and sending Urijah, the priest, a drawing of it, one was made for him exactly similar. In 596 B. C. Nebuchadnezzar, King of Babylon, broke up the bronze pillars, the sea, and the bases of the Temple at Jerusalem, and removed the pieces to Babylon (a work of considerable difficulty), and it follows that probably many of the bronze articles found by Sir H. Layard and others in the ruins of that city may ard and others in the ruins of that city have been made from the bronze of the

have been made from the bronze of the Temple furniture.

A singular confirmation of the idea that the brass and copper of Scripture are bronze is given by Mr. Edwards in the Edinburgh Philosophical Magazine, 1350, where he describes certain relics found near Marazion or Marghazin, one of the oldest towns in Cornwall, leading to the conclusion that the Jews had smelting houses near the shore. The remnants of these smelting pits are still called by tradition Jows' houses, and the called by tradition Jows' houses, and the town itself is also called Market Jew, in addition to Marghazin, which means Market Mount; called so, no doubt, by the Jews, as the place where the metals were purchased and sold. Possibly the bronze alloy, the mixture of copper and tin, may have been cast here in ingots and shipped in that form;

but this is conjecture.

The bronze of classical antiquity (Greek, χαλκός; Latin, ωs) consisted of copper, with an alloy of one or more of the following metals—tin, lead, silver, zinc; the quantity and character of the alloy changements the character of the alloy changements the character of the alloy changements.

The Romans used lead in their coins, but gradually reduced the quantity, till, under the Emperors Caligula, Nero, Vespasian and Domitian, they coined pure copper, but afterwards reverted to the mixture of lead.

This word $\chi \alpha \gamma k \delta 5$ originally appears to have been the word for pure copper, and is so employed by Homer, who calls $\epsilon \rho u \Theta \rho o \delta$ (red), $\alpha u \Theta \omega \rho$ (glittering), $\Phi \epsilon \epsilon \nu u v \delta \delta$ (shining), terms which will apply to pure copper or the bright alloys of bronze, such as the

ancient mirrors were made of.

The old Greek poet describes the process of casting in almost similar terms to those in which it would be poetically described to-day, showing us that the processes then used and now were as nearly as possible alike, and proves the art of work-ing the various substances to have been well inderstood at that remote period.

The passage referred to is in the Iliad of Homer, in the description of the manufacture of the shield of Achilles by the god

Thus having said, the Father of the Fires
To the black labor of his forge retires.
Soon as he bade them blow, the bellows turned
Their own mouths; and where the furnace burner
Resounding breathed; at once the blast expires, And twenty forges catch at once the fires,
Just as the god directs; now loud, now low,
They raise a tempest or they gently blow. Worcester. Mass. And stubborn brass, and tip, and solid gold,

Thus the broad shield complete, the artist crowned With his last hand, and poured the ocean round.
In living silver seemed the waves to roll, And beat the buckler's verge and bound the

In this description of the casting, Homer uses the word χαλkός, so that we can scarcely tell whether he means copper pure or alloyed. Further, it is more difficult when we read of the mythical Dactyles of Ida in Crete, or the Cyclops, being acquainted with the melting of χαλkός. It is not, however, likely that the later Greek writers, who knew bronze in its real sense, would have used the word χαλkός without qualification to objects which they had seen, qualification to objects which they had seen,

inless they meant it to be taken as bronze. Pausanias speaks of an old statue he bad een made of separate pieces of metal fastned together with nails, and, using the same word, we understand him to mean bronze, as there exist very early figures of bronze thus made. We read also of the process called "sphyrelaton," being to hammer out the plates and fasten them together with nails. Pausanias also tells that "the Phœnicians pretended that Ulysses dedicated a statue of bronze to Neptune Hippius," but adds that "he does not give credit to the statement, as the art of fusing the metals and casting them in a mold was not then known." "In fact, the first who cast statues were Theodorus and Rhæcus, both natives of Samos."

It has been generally thought that their merit consisted in casting the statues with an inner core, which could afterward be removed, leaving the castings light, and, therefore, less costly. But this is open to question, as we have before seen from Assyrian bronzes having been found cast with an inner core of a date older than Theodorus and Rhecus, and there is now in the British Museum an early Etruscan statu-ette from Sissa, on the Volturno, with a

ore of iron.

The Samians were very early noted for their skill in this branch of art, and before the foundation of Cyrene, B. C. 630, they made a bronze vase ornamented with griffins, supported on three colossal figures of bronze, for the Temple of Juno.

for the Temple of Juno.

The art was known at a very remote period in Italy. Among the Etruscans bronze statues were common before the foundation of Rome, 750 B. C., and Romulus is said to have placed a statue of himself, crowned by Victory, in a four-horsed car of bronze, in the new city. Pliny states that "King Nuna Pompilius, the immediate successor of Rompiles founded a fract successor of Rompiles founded a fract successor of Rompiles. ate successor of Romulus, founded a fraternity of brass founders and bronze workers."

By the Romans a compound was used under the name of oncalchum or auncalchum," which appears to have possessed the composition and properties of

A brazen bull is traditionally said to have A Grazen but is traditionally said to have been contrived by Pericles at Athens for Phalaris, tyrant of Agrigentum, 570 B. C. It had an opening in the side to admit the victims, and a fire was kindled underneath to roast them to death. The throat was so contrived as to make the groans of the vic-tims resemble the roaring of a bull. The artist was made the first experiment, and the tyrant for whom it was made was roasted

in it 549 B. C.

The oldest seat of bronze founding to any extent was the island of Delos, and next to that the island of Ægina. Between these two there existed a rivalry in the times of Myron and Polycletus, of whom the former used the brouze of Delos, the latter that of Ægina. More celebrated than either was the bronze of Corinth, about which it is said "that when Lucius Mummius burnt Corinth, 146 B. C., all the metals in the city melted during the configuration, and, running together, formed the valuable composition called Corinthian brass. This sexceedingly doubtful, but there may be a spice of truth in it, as long before this period the Corinthian artists had obtained great credit for their method of combining copper with gold and silver. Plays away of it, if it with gold and silver. Pliny says of it : consisted of gold, silver and copper, and was considered more precious than silver, and little less valuable than gold." There were three kinds of it, varying in color from white to dark yellow.

Corinthian brass appears, for the most part, to have been used for the manufacture quantity and character of the alloy changing with the changing times or different purposes. Among existing bronzes, copper varies from 67 to 95 parts. The Phoenicians who traded with the Egyptians would also bring the tin alloy to the Greeks and Romans. Homer calls the metal Kassiteros, and this is equivalent to the Arab word Kassadeer, by which tin is known in the East; it is also called Kastira in Sanscrit. We are is also called Kastira in Sanscrit. We are enabled from the analysis of coins to arrive at some results as to the admixture of the admixture of the admixture of the some results as to the some results as th at some results as to the admixture of the metals. It thus appears from their coins that the Greeks adhered to a mixture of copper and tin till 400 B. C., after which they used lead. Silver is rare in these coins.

The Romans used lead in their coins, but siege of the city

It is asserted to have spanned the entrance to the harbor of the island, and to have admitted the passage of vessels in full sail between its widespread legs. Its hight

This stupendous work was thrown down by an earthquake about 224 B. C., and for nearly nine centuries lay in ruins on the ground. Pliny says: "It was a wonder to behold. Few persons could embrace the thumbs, and the fingers were longer than the thumbs, and the fingers were longer than the bodies of most statues. Through the fractures were seen large cavities, into which large stones had been placed to balance it while standing." After the fall of the Roman Empire, when the island of Rhodes was conquered by the general-in-chief of the Caliph Othman, he sold the metal lying on the ground, weighing 720,900 pounds, to a Jew, who loaded 980 camels in transporting it to Alexandria.

A statue of Zeus, executed at Tarentum, 325 B. C., by Lysippus (the master of the maker of the Colossus of Rhodes), was 40 cubits high, and though it could be moved by a touch of the hand, yet resisted the force of storms by a support at the point of greatest stress.

greatest stress.

On the number of bronze statues in those ancient times often depended the wealth of

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aving some thousands each.

Of the vast number made by the ancient sculptors nothing but a few fragments remain; but if the colossal head of Venus in the British Museum be taken as a typical example, it will show with what thinness and fineness the figures were cast. Or, again, as an instance of the quality of Greek bronze, the figure of Siris, also in the British Museum, on which a plate of bronze

thinness of note paper.

But if the larger works fail, there is an abundance of statuettes, candelabra, mir-rors, cestæ and vessels of all kinds, Greek, Roman and Etruscan.

will be seen beaten out till it reaches the

Works in relief (νόρευμα), whether beaten out, chased or cast, are comparatively rare, though this branch of the art was practiced by the greatest sculptors. The Temple of Athene Chalkoites, in Sparta, had its walls covered with bronze reliefs, but this was an exception to the general rule adopted in the temple decoration.

The greater number of mirrors that exist are Etruscan; a few may be Roman and Greek. But the general rule of their being Etruscan reminds us of the reputation the Etruscans had for the production of works in bronze—not, perhaps, of high art, but what may be more correctly termed "industrial art."

They were also celebrated for modeling in clay, and this, according to Pliny, "was the stage of art which immediately preceded casting in bronze, and went hand in hand with it."

The mirrors give the finest examples of patina which we find; in the alloy there seems to have been mixed a considerable quantity of silver in order to obtain a highly effecting surface.

For articles of furniture the Romans employed Greek artists and workmen. In bronze were made the sellæ, square seats carried about at Roman entertainments; also footstools.

In the excavations made at Pompeii and Herculaneum, various works of bronze are found, showing the general adaptation made

of bronze by the Romans.

In the theater are bissellii, or chairs of state, made of bronze and ornamented with silver, for persons of distinction and muni-cipal authorities.

cipal authorities.

In the tepidarium of the beths are bronze benches, 6 feet by 1 foot, supported by four legs, terminating in the cloven hoofs of the legs, terminating in the cloven hoofs of the cow, and ornamented at the upper end with heads of the same animal. In the same baths, a brazier of bronze, 7 feet 6 inches by 2 feet 6 inches, supported on cast bronze legs, representing winged sphinxes, terminating in lions paws. In one of the shops a bronze urn, evidently used for making warm decoctions, and similar to the muller now in use a bronze model for making pastry and use; a bronze mold for making pastry and a pair of scales—articles of these kinds in addition to the large number of statues and

addition to the large number of statues and ornamental articles.

In all the bronzes from Pompeii and Herculaneum, the blue color of the patina is very brilliant, although in other bronzes it is more generally some shade of green. This arises from their lying so long in the earth. A difference of soil probably makes a different patina, but something is also due to varieties in the alloy.

eties in the alloy.
Greek seats (thronoi) are sculptured on the Parthenon frieze, and sumptuous Greek furniture during the last two centuries B. C. was made of bronze, damascened with gold and silver. It does not appear that the process of gilding bronze was carried to any extent in classical times, except in the production of finger rings, of which a considerable number remain.

During the excavations made in the palace of Tiberius at Capri, the bronze cock of a reservoir was discovered. As there were conduits of water, and pipes necessarily conveying it to the baths, the knowledge of cock making must have been known and practiced, of which this discovery gives a practical proof.

By the time of the Byzantine Empire the power of modeling seems to have declined, and a taste for glittering appearance took its place, and hence the process of orna-menting bronze with reliefs was superseded by inlaying it with silver and other ma-

The art of bronze casting, which had thus sunk during the Byzantine period, was revived with great vigor in Germany in the leventh century, and there used for the ornamentation of gates and doors of public buildings; notable instances being the bronze gates of the Cathedral of Hildesheim, A. D. 1015, and the column decorated with reliefs on the model of the Trajan Column at Rome,

A. D. 1022.

In the twelfth century the art spread southward to Italy, and was at first taken up onergetically in lower Italy. But though many interesting works of this date exist—and also from the thirteenth date exist—and also from the thirteenth and fourteenth centuries—it was not until the fifteenth century that the art obtained its full mastery. Then the revival of classical art became a real revival under the Florentine artists. Andrea Pisano had made a brouze gate in the Gothic style for the Baptistery of St. John at Florence, 1330 A. D., and in 1401 A. D. the Florentine Council decided to erect another. A competition of artists for the work resulted in the selection of Lorenzo Ghiberti. The competition of artists for the work resulted in the selection of Lorenzo Ghiberti. The contract was entered into with him and his father November 23, 1403 A. D., and the gates completed and fixed April 24, 1424 A. D. They are truly a magnificent piece of art workmanship, remarkable in several respects as specimens of figure and ornamental modeling of the greatest possible excellence, and which have formed the models in this style for artists of all the following years, and of metal easting which cannot be surpassed.

The subjects of the 28 panels of the gates are from the life of Christ.

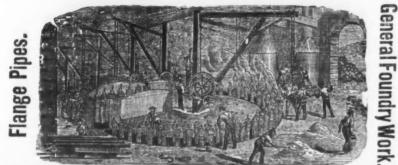
On January 2, 1424 A. D., Ghiberti respectives are from the life of Christ.

are from the life of Christ.

On January 2, 1424 A. D., Ghiberti resceived the commission for the second pair of gates for the same building, and these, containing subjects from the Old Testament, were completed and fixed June 16, 1452 A. D. The Martinengo Tomb in Brescia, erected about the year 1530 A. D. to Marcantonio Martinengo, though by what artist is unknown, is a fine specimen of this period. The bas reliefs of bronze are subjects from

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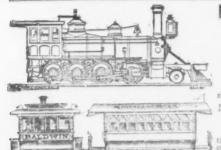
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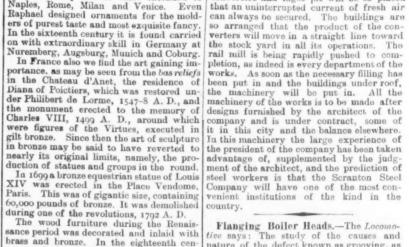
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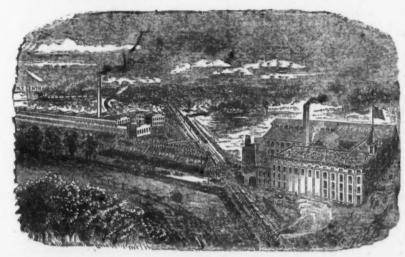
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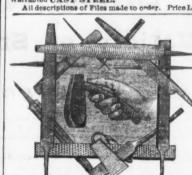


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INDUSTRIAL ITEMS.

MAINE.

The American Railroad Rail Joint Company has been formed at Portland for the purpose of buying and selling railroad joints, with a capital of \$500,000.

NEW HAMPSHIRE.

The Continental Construction Company, of Chicago, have purchased the old New Hampshire Prison property in Concord, which consists of a large machine shop and some other buildings, and propose to remove their works to that place. The company have been instrumental in starting a movement to utilize the extensive water power. have been instrumental in starting a move-ment to utilize the extensive water power at Sewall's Falls, at East Concord, about two miles from the city proper, and it is be-lieved that the extent of this water power, the facility with which it can be utilized, its contiguity to Concord and Montreal rail-roads within a stone's throw on either side, need only to be known to attract capitalists from abroad and secure its transformation. from abroad and secure its transformation

The Nashua Lock Company are making another addition of 100 by 20 feet. The company have also built a story over the engine-room, 20 by 40 feet, for plating department.

MASSACHUSETTS.

The Worcester Wire Works have shut down till the 1st of November, to allow an opportunity for the introduction of their new engine and a lot of other machinery necessary to their increased business. The engine has a capacity of about 500-horse power, and is from the Green Steam Engine power, and is from the Green Steam Engine Company, of Providence, from a model entirely new and different in many important features from anything yet turned out at the works. The cylinder is 26 x 48 inches, and the fly-wheel is 18 feet diameter and 37½ inches face. A new Berkley condenser is also to be put in. The increased power, it is expected, will enable the company to do more than double the work than by the old engine. Besides this, three new 80-horse-power boilers have been introduced and more than 300 feet of new shafting. and more than 300 feet of new shafting. The latter will be connected with the engine

and the now machine shop.

At Lawrence, E. McCabe & Co., boiler makers, are about to erect a new shop. They now employ 25 men. The Pacific Mills are using 45 boilers made by them.

The Thems Machine Co. have received the crief from the Machine Co.

The Phenix Machine Co. have received the order from the Maginnis Cotton Mills, of New Orleans, La., for the entire outlit for their patent improved warpers. The Whitehead and Atherton Machine Co., of Lowell, are to furnish the entire picking machinery. The rapidly increasing business of the Pairpoint Manufacturing Company, New Bedford, necessitates the immediate erection of a separate building for the manufacture of knives, forks and spoons. This addition is to be of brick, about 40 feet square, and situated to the westward of the ongine house. engine house.

Business at the works of the Northampton Emery Wheel Company has increased so much that 10 new baking ovens are being constructed. The foreign trade is much larger than formerly, and three large orders have been received already this month from Germany. This trade takes in wheels all sizes, from 24 inch down to I inch in dia-

RHODE ISLAND.

The Builders' Iron Foundry, Providence, is engaged in filling an order in iron bridge piers, 8 feet in diameter, and 10½ feet in length, for the New Orleans and Pacific Radroad Company. The bridge is to span one of the tributaries of the Red River in Lonisiana. Each piece weighs nine tons, and is trimmed and finished ready for setting with feet leaving the foundry. and is trimmed and inished ready for setting up before leaving the foundry. The contract cals for 75 of these piers, about half of which have been forwarded to their destination, and the remainder will be sent before the first of December, the rate of supply being one a day. The establishment melt daily about 25 tons of ore. The Builders' is the only foundry in the city femerged in producing gun iron, and makes a specialty of air-furance castings. The iron used in these castings is the finest quality of colf-blast charcoal iron. The concern is now under contract to supply a large quantity of this iron, which is guaranteed to have a tensile strength of 30,000 pounds per square inch. The average tensile strength a tensile strength of 30,000 pounds per square inch. The average tensile strength of ordinary iron is from 12,000 to 15,000 pounds. Test samples are made with each casting and sent to Watertown arsenal for repairs, after one of the longest continued runs ever made since the works have been built.

The forge at Howard is supplied to have ger locomotives left the shop within a week past, seven having been on the stocks at one time.

The Hollidaysburg Iron and Nail Company's rolling mill has closed down for repairs, after one of the longest continued runs ever made since the works have been built.

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The Hollidaysburg Iron and Nail Company's rolling mill has closed down for repairs, after one of the longest continued runs ever made since the works have been built. CONNECTICUT.

At Tariffville the Hartford Cutlery Com-

tinue the manufacture of this style of cutlery.
Farist & Windsor's steel works, at Windsor Locks, are full of orders and crowded
with work. They only do the rolling for the
Leemers Morton process of making steel.
There was commenced tin Bridgeport, on
Friday, a hearing in the suit of the Ætna
Spring and Axle Company, of Bridgeport,
against Messrs. George Hopson, G. B.
Waller, Samuel Wilmot and J. N. Bullock,
all former officers of the company, to recover from them about \$250,000, which
sum, it is alleged, they misappropriated
though an improper and fraudulent administhough an improper and fraudulent adminis-tration of the axle company.

The Horton Chuck Company, of Windsor

PENNSYLVANIA

The Harrison Boiler Works, of Philadelphia, have recently shipped to the Brown & Sharpe Mfg. Co., of Providence, R. I., 150 horse-power of their boilers, being an addition to the boilers used by that firm for 10

J. I. Dawson & Bro., Philadelphia, have removed from their old location to their new removed from their old location to their new and enlarged foundry and machine build-ings, Twenty-ninth street and Gray's Ferry Road. The new place will be known as the Gray's Ferry Iron Foundry Boiler and Ma-chine Works. They will manufacture boil-ers and engines, loam, green and dry-sand castings, and their facilities will enable them to produce eastings of a first-class quality up to 25 tops. to 25 tons.

Tinius Olsen & Co., Philadelphia, were awarded the first premium for their testing machine at the Cincinnati Exhibition, and the jury, in recommending the award, stated that the construction and mode of operation give it points of superiority not contained give it points of superiority not contained in other testing machines which had come to their notice. The universal adjustable clamping wedges for securing a central pull of the specimen, as well as the improved system of screws and gears by which the strain is applied, being novel and well adapted for the purpose. The machine on exhibition was purchased by the Cincinnati Rolling Mill Company.

Philadelphia is rapidly gaining a hardware

Philadelphia is rapidly gaining a hardware neighborhood in the vicinity of American street and Lebigh avenue. At this point the National Hardware and Malleable Iron the National Hardware and Malleable fron Works of Thomas Devlin & Co. occupy space 250 by 250 feet, and have a foundry of 155 by 70 feet. They have a warehouse building of one story high fronting on Lenigh avenue, which is 129 by 40 feet. The company will make a specialty of malleable-iron steam, gas and water fittings, and also of cabinet builders' and carriage herdware. of cabinet, builders' and carriage hardware. We believe they intend to make steel castings to order. The American Machine Company have extensive works on the other side of the street, and within less than a Philadelphia block the J. Barton Smith File Company are putting up a large factory, the size of which we have not just now at hand. It is in this same neighborhood, or at least within half a mile, that the Enterprise Mfg. Co. have their works. This company has been very busy all the season, and we hear that the press of orders still continues. This district will, when all the works we have mentioned are in full operation, employ quite a little army of operatives.

The Northern Liberties Machine Works, Alfred Box & Co., of Philadelphia, have erected an entirely new building in order to secure better accommodation. It fronts 52 feet on Green street and 40 on Dillwyn street. It is a very substantial building, four stories high. The firm expect to be in full working order in November.

Messrs. Hammer & Tryon, solar pho-Messrs. Hammer & Tryon, solar photographers, No. 1617 Spring Garden street, Philadelphia, have completed a 36-inch solar photograph of the portable cylinder boring machine made and used by the L. B. Flanders Machine Works, of this city. The picture has been placed temporarily on exhibition at No. 925 Market street. This is a somewhat unusual size for a solar photograph of machinery. graph of machinery.

The Tyson engine has been recently im-

The Tyson engine has been recently improved, and is now manufactured by the Coles Machine Tool and Steam Motor Co., Philadelphia. This company has fitted up new works at 1010 Hamilton street, and has a large number of orders waiting delivery. This engine, it will be remembered, is especially adapted for small powers, domestic work, &c.

The Southwark Foundry and Machine Co., Philadelphia, is still full of orders for the Porter-Allen engine. It is a noticeable fact that a large proportion of the orders of the present season have been from New England.

The large foundry of the Pennsylvania Railroad, at Altoona, has been put into operation.

The Philadelphia and Reading Railroad Company are unable to supply locomotives fast enough for their business, and the

night, making about 8 tons of A r charcoal bloom per week. The orders are coming in faster than they can be filled, so the pros-

At Tarifiville the Hartford Cutlery Company closed their works on Friday, Oct. 7th. The company came to Tariffville over a year ago and engaged in the manufacture of glass handle table cutlery. Most of their work has been sold by the Union Knife Company of Naugatuck. A rumor states that the latter company is to buy the machinery and continue the manufacture of this style of cutlery.

Earli & Windsor's steel works, at Windsor Locks, are full of orders and crowded order.

Four thousand acres of coal lands on the line of the Pennsylvania Railroad near New Florence, Westmoreland County, are said to have been leased by Philadelphia capit-alists at \$20 per acre. The whole is under-B. laid with an 8-foot vein of coal which will be developed at once.

Charlotte Furnace at Scottdale, and Fair-chance Furnace above Uniontown, which were compelled to shut down during the recent severe drought, have resumed opera-

The Horton Chuck Company, of Windsor Locks, have taken an inmense start, put in new machinery, and are driven with new orders:

DELAWARE.

The Wilmington Melleable Iron Co., of Wilmington, have bought out the business of Richard P. Pim, and will carry on the the manufacture of malleable iron and grayiron casting to order with largely increased facilities. Mr. R. P. Pim is president of the company, and James Bailey secretary and treasurer.

A correspondent writes regarding the furnaces of New Castle: "Of the seven blast furnaces in this city, the Etna No. 1, Etna No. 2, Little Pet, Clars, Rosina, Lucy and Neshannock—only the Etna No. 2, Little Pet, Clars No. 1 in the last. This state of affairs will not last long, however, for the Neshannock will blow in about November, Etna No. 1 in the couse of five or six weeks, and the Clara about January 1. When the remaining two will resume operations, if ever, no man has yet made known."

Mt. Hickory furnace No. 1 at Sharpsville

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JOHN WILSON also hereby gives Notice, that it is his determination to institute Legal Proceedings against any person or persons who may be detected infringing his Trade Mark.

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HEARS, Solid Steel CISSORS, Japanned and Nickled

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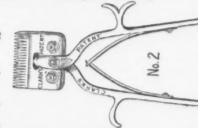
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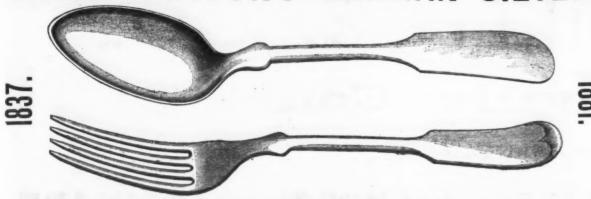
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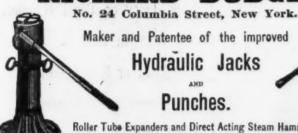
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Torrey's Door Springs.



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COG WHEEL Ice Cream Freezers.

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IRON CLAD STEEL HORSE SHOE CO., SELF WELDING STEEL TIRE CO., BILLET AND WIRE CO., BILLET AND WIRE CO., THE COMBINATION a Combination" Shoes, Shoe Bars and Toe Calks. Tire and or otherwise to WARE B. GAY, Treasurer, 66 State against infringements.

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Phosphor-Bronze is daily gaining favor with manufacturers who have to use a metal of great toughness and durability, of fine grain, high tensile strength and ductility, and is acknowledged far superior to any other alloy on account of the readiness with which it takes a polish, its elasticity, fluidity and beauty of color. Its high price, however, has so far prevented the use of it to so large an extent as its merit would warrant. For the first time an article is offered herewith which makes it easy for everybody to manufacture his own Phosphor-Bronse of the grade it is wanted, by the simple process of metting. This article is PHOSPHOR-TIN. By melting a very small quantity of it with copper an excelent cle is PHONPHOR-TIN. By meiting a very small quantity of it with copper an excelen Phosphor Bronke is obtained at a much cheaper price than the ready made Phosphor Bronze car be had in the market. A trial ought to be made by everybody who is using it.

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cast steel, selected. All saws subjected to a careful examin-ation before shipment. A trial of our goods will sat-isfy the purchaser of their excellence. Send for catalogue.

JOHN STARR, Hardware & Metal Broker,

MANUFACTURERS' AGENT, Halifax, Nova Scotia,

Representing in the Dominion of Canada several American Manufacturers, is ready to accept Furnace, owned by the Pennsylva-An increase of 227,370 gross to nia and Virginia Coal and Iron Company,

The biggest week's work ever

has to clean the hot blasts and make a few repairs, which will take several days.

All the iron foundries and machine shops

in Scranton are busy on machinery for the

Scranton steel mill.

The shipments of slate from Slatington and vicinity for the week ending Saturday, Oct. 15, were as follows: Roofing slate, 2326 squares; school slate, 351 cases; mantels, 3 cases and 345 pieces; blackboards, 55 cases; flagging, 26 cases and 577 pieces. The slate trade continues in an excellent condition.

condition.

The Easton Lock Works, which were about to remove from that locality on ac-count of high rents and taxes, have been offered a lot of ground, as a present, to build

on if they remain.

The rolling mill at Beaver Falls, which has been idle for several months, resumed work on Monday last. The steel works, which were almost totally destroyed by fire eight weeks ago, are again in operation.
The hinge and barbed wire factory, burned ot the same time, is also again in operation.
The file works, shovel works, glass works, planing mills, the cutlery works, and in fact every branch of industry, are all doing a

A dispatch from Philadelphia says that the gross receipts of the Philadelphia and Reading Railroad and Coal and Iron Company for the month of September were \$3,356,411.57; expenses, including interest, \$2,227,592.55; net earnings, \$1,128,819.02, being a decrease for the month as compared with the corresponding month last var of with the corresponding month last year of \$303,323.55. The profits of both companies for the year to date are \$8,c63.677.16, being an increase of \$1,070,983.54, as companed with the corresponding period last year.

The Reading Hardware Company are

Roland Furnace, at Mill Hall, Clinton County, commenced operations last week.

The Kittanning Iron Co. will soon blow out their Rebecca Furnace for repairs.

To supply additional blast to their converters, the Lackawanna Iron and Coal Company have just erected and put in operation at their steel works an additional horizontal blowing engine, larger, though similar in type to the two already there. This engine was made by the Dickson Mfg. Co., and is an unusually fine piece of work-manship. The steam cylinder is 60 inch diameter and 60 inch stroke, and the blowing cylinder 54 inch diameter and 60 inch stroke. This engine was ordered by Mr. Scranton, the Iron Company's late general manager, some time before his resignation, and though in operation but a short time, and though in operation but a short time, seems to more than answer the expectations formed of it in diminishing the time of blowing heats, and thereby increasing the capacity of the works. The company have also about really for operation a horizontal engine, 30 inch diameter and 36-inch stroke, for driving their cupola blowers, and have ordered additional engines for their blast

Messrs. Hummel, Fendrich & Co. have taken possession of the old Novelty Iron Works in Harrisburg, and have started them up as the Harrisburg Steel and Iron Works, having thoroughly repaired, refitted and ex-tended them. Their business is the manu-facturing of merchant bar, iron and steel; norse and mule shoe steel and iron : square oval and round iron; tire steel and iron toe calks, steel and iron and other mercan toe carks, steel and from and other mercantile material in the line. The firm will make a specialty of the manufacturing of Mr. E. B. Edwards' patent iron, or semisteel, an iron that will stand a tensile strain of from 63,000 to 65,000 pounds to the square inch. A test of this iron was made by the United States naval inspectors with by the United States naval inspectors with a successful result of 63,000 pounds tensile strength. The works employ 65 men, and have a capacity of from 4000 to 5000 tons of iron per annum.

PITTSBURGH AND VICINITY.

Messrs. Brown & Co., of the Wayne Iron and Steel Works, have leased for a short

and Steel Works, have leased for a short time the sheet mill of the Eagle Rolling Mill, now owned by J. W. Friend & Co. Charles F. Brush, of the Brush Electric Light Company, last week filed a bill in equity in the United States Circuit Court against the Siemens-Anderson Steel Company and Robert J. Anderson. The bill shows that the plaintiffs own the patents on the Brush electric light, and claims that the defendants' company make and use large quantities of electric lamps in violation of the plaintiffs' patent, and an injunction is asked for. This is probably the beginning of considerable litigation. The Weston and the Fuller electric lamps are claimed by the Brush people to be an infringement on their patent. All these lamps are constructed on the same principle, except that Brush was the first to use copper coating on the carbon points, and he especially says that this device has been infringed on by the Weston lamp, and also that the Weston lamp uses an annular clamp which is covered by Brush patents. The defendant company merely use the Weston lamps.

The eastern wing of Minnemeyer's mallea-

ble iron works, Allegheny, was badly damaged by fire last week. The principal loss was by the destruction of two large annealing furnaces and the damage by water. The loss will not exceed \$4000, fully covered by insurance.

Five hundred and ninetzeu kegs of spikes were turned out, Thursday last, at Dilworth, Porter & Co.'s spike mill. It was the largest day's work ever done at the mill.

A large 25-ton anvil block has been delivious at the mill.

ered to the Siemens-Anderson Steel Com-pany by the Atlas Works. A 16-ton anvil is to follow.

The interest of the late James E. Brown in the Kittanning Iron Company has been sold to John Graff, of the firm of Graff, Ben-The new repair shops of the Pennsylvania

Railroad at Torrens Station will occupy about an acre of ground in the rear of the present branch shop. It is expected that the new shops will be ready to commence operations with the beginning of next year. They will employ about 200 men.

VIRGINIA. Low Moor Furnace is averaging 100 tons

has been leased to Eastern capitalists at an annual rental of \$60,000, so says the Virgi-

The Plate Glass Works at Massillon will probably employ about 100 men when started. They will also have a bottle de-

The Lane & Woodworth Patent Glass Roofing Company, Youngstown, have a force of men engaged for the foundations for their

buildings north of the Valley Mills.

The Belfont Iron Works Company, at Ironton, will probably add 20 nail machines to their works this winter, increasing their complement to 100. This will necessitate several additional puddling furnaces.

Another new 10-pot glass works is in con-emplation at Ætnaville. Ground will be broken this week.

The Hubbard Rolling Mill was running double turn all last week.

Tiltonville is to have a glass works, not-withstanding reports to the contrary. Masons have almost completed the founda-Masons have almost completed the foundation, and it is expected the enterprise will be in operation by January I. The works are being erected on the line of the Cleveland and Pittsburgh Railroad, just above Tiltonville. It is to be a large 10-pot furnace, affording facilities for manufacturing all kinds of flint glassware. It is a joint stock concern, Wheeling, Martin's Ferry and Bellaire parties being the stockholders.—Cleveland Trade Review.

The Pennsylvania Iron and Steel Company, of Canal Dover, capital stock \$200,000.

pany, of Canal Dover, capital stock \$200,000, was incorporated last week to build iron works at that place.

A charter has been obtained for the Bellaire Bottle Works, to be located in Bellaire. The capital is to be \$50,000. The Bellaire. The capital is to be \$50,000. The stock will soon be raised and the building of the works begun.

Means, Kyle & Co. will probably let the Ohio Furnace remain idle next year, owing.

to the distance they have to haul charcoal. Todd & Co., at Youngstown, are building three large presses, weighing to tons each, for straightening steel rails. They are to go to Colorado.

ILLINOIS.

The Chicago Department of Public Works opened bids on the 20th inst. for large quantities of special castings and cast-iron water pipe, to be used in the street improvements now in progress. The Union Foundry Works and J. H. Bass offered to supply the special castings for cast iron water pipe at \$52 and \$57 per ton respectively. For the hydrants and stop-valve castings the the hydrants and stop-valve castings the Union Foundry Works sent in a bid of \$6.4 per ton, and J. A. Bass \$60 per ton. The following were the bidders for 1000 tons of cast-iron water pipe: Lake Shore Foundry, \$43.50 per ton; A. H. McNeil, \$43.95; Dennis Long & Co., \$43.80; Cincinnati and Newport Co., \$43.94; R. D. Wood & Co., \$43.83; Schickle, Harrison & Co., \$45.

Rogers, Brown & Co., of Cincinnati, O., announce that they have established a branch pig-iron commission house in Chicago, to be

oig-iron commission house in Chicago, to be krown as Rogers & Brown, with Mr. Geo. Fetter, late of Geo, G. Fetter & Co., Louisville, as manager. The business, having the edvantage of the connections of Rogers, Brown & Co., of Cincinnati, will be an independent local house, dealing with furnaces and consumers directly. It begins with the sales agency of thirty or more of the lead-ing furnaces of Ohio, the Southern States and the East. The office is at 88 Dearborn street.

The main building of the Willard Sons & Bell Co., new steam forge at South Chicago, is nearly completed. Its size is 251 x 60 feet; it will contain 10 steam hammers and as many furnaces. In addition to that building there will be a machine shop 30 x 60 feet, and a "scrap house" 40 x 40, and still another for puddling furnace and rollers, 60 x 60. One of the furnaces and steam hammers will start in a few days.

The Calumet Iron and Steal Company of

The Calumet Iron and Steel Company, of ondale, having just completed 12 nail machines for their works, are adding three

nore, making 90 in all. Chas. F. Eloies, manufacturer of mining

and general machinery, is building four Wil-lard helve steam hammers for the Pullman Palace Car Company, Pullman, and one for the Willard, Sons & Bell Co.'s new works at

South Chicago.

The Roger's Foundry Co., of Belleville, has been incorporated with a capital of \$25,000 and Robert Eddy and Geo. W. Rob-

erts are the incorporators.

Holmes, Pyott & Co., of Chicago, employ in their iron works 120 men and melt 14 tons of iron a day.

Work has commenced at the F. H. Manny Agricultural Implement manufactory, which removed from Rockford to Waukegan last

INDIANA

The Atlas Engine Works, Indianapolis, are building two Corliss engines, to be placed in the new St. Paul shops of the C. St. P. M. & C. R. One of these engines is roo-horse power, and the other 150. The works have an order from Gaff, Gent & Thomas, Col-umbus, Ind., for an 80-horse-power Corliss The works were awarded at the Ninth Cincinnati Industrial Exposition, a gold medal for the best slide-valve engine shown. This, we believe, was a first pre-KENTUCKY.

Every department of the Norton Iron Works, Ashland, has been in full blast during the past week, and working satisfac-torily. The furnace has been making an average of about 50 tons of superior iron per day. The nail factory has turned out 4151 kegs of nails.

Ashland Furnace made during the last

week a daily average of 57 tons of good iron, using all raw coal for fuel. MICHIGAN

The following table from the Marquette Mining Journal exhibits, in gross tons, the total lake shipments of iron ore the present season, up to and including October 12, to-gether with the amount shipped during the corresponding period last year:

Where from. Escanaba Marquette L'Anse	502,400	1881. 1,189,53 590,45 45,15
Total		1,831,15

The biggest week's work ever done at the

H. D. SMITH & CO.

Plantsville, Conn.,

Manufacturers of the

BEST QUALITY CARRIAGE MAKERS' HARDWARE.

Manufacture the Largest Variety of Forged Carriage Irons of Best Material and Workmanship.

PRICES LOW FOR QUALITY OF WORK FURNISHED.

The Saranac Nails are hammered hot and the finishing and pointing are done cold. Quality is fully guaranteed. For sale by all leading iron and hardware houses. PLATTSBURG, N. Y. W. S. GUIBORD, Secretary, S. P. BOWEN, President and Treasurer.

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STEEL BARREL AND

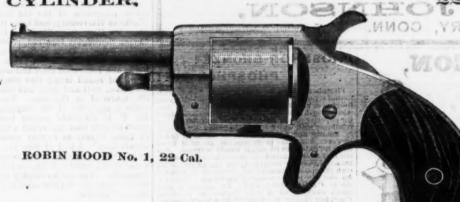
Cal., Short or Long Cylinder.

Wood, Rubber Ivory and Pearl Handles. Plain or Fluted Cylinders.

Round or Octagon Barrels.

Plain Finish, Engraved or Enameled.

FOR JOBBING TRADE.



32 Cal. Long Fluted Cylinder. Wood, Rubber, Ivory or Pearl Handles. Round or Octagon Barrels.

38 and 41 CALIBRE.

Plain or Saw Handle.

Plain Finish, Engraved or Enameled.

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OBB&DREW The Boss Lemon Squeezer. GOODELL'S WHITE MOUNTAIN

Manufacturers of Copper, Brass and Iron Rivets; Common and Swedes Iron, Leathered, Carpet, Lace and Gimp Tacks; Finishing, Hungarian, Trunk, Clout and Cigar Box Nails, &c. Rivets made to

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HARDWARE, 165 GREENWICH STREET,



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MINERS' CANDLES.

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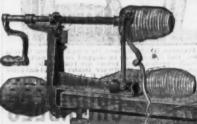
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nose. No sharp points

HYMES

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Inose any or the recessor Facers in the market as at they might do the work better "next e," but the "White Mouatain." DOES IT NOW wery Machine warranted as represented.

Price to the Trade, \$8 per desen.

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Sweet's Toe Calks and Calking Steel. All Leading Brands of Horse Nails.

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THE "BOSS" SCYTHE RIFLE. rranted not to scale or glaze. Impervious to water, and not affected by heat. It is the best Rifle now LEVI L. BROOKS, Manufacturer.

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94 Chambers St., New York, Agents for American Screw Co.'s Wood Machine and Rail Screws, Stove and Tire Bolts. Rivets, &c. G. F. Warner & Co.'s Carriage Clamps. DEPOT FOR

O. Ames & Son's Shovels, Spades and Scoops A. Field & Son's Tacks, Brads, Nails, &c. Nicholson File Co.'s Files and Rasps. W. & S. Butcher's Chisels, Gouges, Plan Irons and Cleavers.

B. W. Gilmore & Co.'s Strap and T Hinges Russell Jonnings, Auger and Dowel Bits. Also a general assortment of Hardware.



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Universal Sash-Lock Co.,

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, Carpenters', Stone Cutters' Copper and Roller Makers' MALLETS,

Hawsing Beetles, Hawsing and Calking Irons also all kinds of Handles, Sledge, Chisel and Ham mer Handles, Also COTTON AND BALE HOOKS.

Patented Feb. 13, 187; a new combination of Hooks
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Dog Collars, Blankets, and Furnishings UNIQUE LUNCH BOX



W. & J. TIEBOUT,

Brass, Galvanized & Ship Chandlery Hardware, No. 33 Chambers St., New York.

Vulcanized Rubber Fabrics

MBBERBEIZ

MECHANICAL PURPOSES. RUBBER BELTING and PACKING.

NY.

Machine Belting, Steam Packing, Leading Hose, Suction Hose, Grain Elevator Belting.

Piston Rod Gaskets and Rings,



Ball Valves, Car Springs. Wagon Springs, Gas Tubing, Machine Belting, Wringer Rolls, Billiard Cushions, Grain Drill Tubes, Emery Wheels.

Vacuum Pump

LINEN and COTTON HOSE.

Plain and Rubber Lined.



Circular Woven-Seamless Antiseptic HUBBER HOSE, Vulcanized Para Rubber and Carbolized Duck, for the use of Steam and Hand Fire Engines, Force Pumps, Mills, Factories, Steamers, Ships, Hospitals, &c

"CABLE" ANTISEPTIC

Emery Wheels and Packing. ORIGINAL Solid Vulcanite



EMERY WHEELS

LARGE WHEELS MADE ON CAST-IRON CENTER IF DESIRED



PATENT ELASTIĆ Rubber Back Square Packing BEST IN THE WORLD.

For Packing the Piston Rods & Valve Stems of Steam Engines & Pumps B represents that part of the packing which, when in use, is in contact with the Piston rod. A the clastic back, which keeps the part B sgainst the rod with sufficient pressure to be steam tight, yet creates but little frietion. This Packing is made in lengths of about 20 feet, and of all sizes from 1/4 to 2 inches square.

Corrugated Rubber Mats and Matting,

RUBBER

For Halls, Flooring, Stone and iron Stairways, &c. This practical and indispensable articles—especially for wear where exposed to lee, snow or slush—was first introduced by this coinpany several years ago, and its real value is in being almost indestructible, when proper materials are used in its manufacture, whilst the cheap, public by reckless imitators of our patent goods soon becomes brittle

NEW YORK BELTING & PACKING CO.,

CUT TACKS, SHOE NAILS, WIRE NAILS. Pat. Brads, Finishing Nails, Clout Nails, Trunk Nails, Hungarian Nails, Cigar-Box Nails, Basket Nails, 2d and 3d Fine Nails, Carpet Tacks, Upholsterers, Tacks, Gimp and Lace Tacks, Brush Tacks, Copper and Brass Tacks, BRASS AND IRON ESCUTCHEON PINS, &c., &c.

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The Phosphor-Bronze Smelting Co.,

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THE STRONGEST, TOUGHEST, BEST AND MOST DURABLE METAL.

PHOSPHOR BRONZE SPRING WIRE AND WIRE FOR WEAVING, &c. Pump Rods, Tubes, Screws, Jack Chains.

Wire Cloth, Rolled Bolts, Nails, Sash Cords, Boat Nails, Pens, Wire Ropes, Sheets, Sash Chains, Cast Kettles. Plates. Tacks,

INGOTS FOR CASTING. Send for Pamphlet and Price Lists.

PHOSPHOR-BRONZE.

Deer Lake Furnace was that of last week, when 1951/2 tons of iron were made on an average of 104 bushels of coal. The furnace has been in blast one year, and has turned out something over 8000 tons of pig metal. Some persons think it doubtful whether there is another 8-foot bosh in the country that can show an equally good record. MISSOURI.

The Union Machine Shops, of St. Louis, are being considerably enlarged by the addition of a two-story brick building, in which additional machinery is to be placed.

WASHINGTON NOTES.

(From Our Own Correspondent.)

WASHINGTON, D. C., Oct. 26, 1881. very interesting report has been re-ed by the Department of State from the ceived by the Department of State from the United States Consul at Cork, Ireland, upon the subject of American, Irish and English shipbuilding. The rates of wages are given in a short table, and he shows the following

as the rates paid per day in Ireland : Carpenters and shipwrights..... Smiths and engineers...... Joiners and riggers...... Laborers.... .\$1.32 to \$0.66 to aborers....and never exceeding \$1 per day.

The days are from daylight to dark in winter, and from 6 a. m. to 6 p. m. in summer, with one and one-half hours for meals. The best paid only receive \$1.56 per day. advance sheets of the report we take the fol-

lowing extract : "Such a change can, of course, only be ccomplished when its importance has been duly impressed upon the people of the United States and their legislative repre-sentatives. To those who have no personal sentatives. To those who have no personal knowledge, gained by immediate observation, of the immensity of our export trade, it will be difficult to convey this impression, but it is a significant fact that these same people and their representatives have in time past yielded cheerful and generous aid to great trans-continental railway projects, canals and other kindred internal improverents. It is, therefore, not improvements. It is, therefore, not improbable that in due course Congress and the people may become sufficiently well informed regarding the necessitios and advantages of this subject to assure the requisite reformatory legislation in behalf of what may be portiputly described as external improvements. neutly described as external improvements.
Once let it be thoroughly understood and appreciated that this needed reform will retain in the pockets of our own people the thousands upon thousands of dollars now paid to foreigners for the transportation of American products abroad, and there will be very little opposition to this movement that is to say, prove the reform to be a good investment to the community at large,

and the community will invest in it as they did in the railways and canals.

"The adoption of a policy outlined in the "The adoption of a policy outlined in the following suggestions might possibly aid in the advancement of this reform: I. Let Congress as soon as possible, and as far as practicable, remove from American built ships all kinds of taxes now imposed upon them, including national, State and municipal, as well as tounage, harbor and lighthous dues and consular fees. 2. Let Congress crapt such hounties or premiums, or gress grant such bounties or premiums, or even direct subsidies, to American ship owners as will enable them to compete with the subsidized steamship lines of other countries. 3. Abrogate as soon as possible all government contracts with foreign-built vessels for carrying the mails or any other purpose, and then pay reasonable prices for the same services to American-built ships. 4. Stimulate, also, by bounties and pre-miums, the shipbuilding interests of the country until it is competent to attempt, as it did years ago, a successful rivalry with the shipbuilders of the Clyde and Mersey."

the shipbuilders of the Clyde and Mersey."

The report then summarises the whole subject as follows: "Go where you will, you will find some convincing evidence of the boundless resources of American industry and invention, or of the prolific yield of American agriculture. But also, and alas! go where you will, you will rarely, too rarely, find in any port the American flag carried by American ships bearing American goods. And this sad fact is as much a matter of amazement to the average foreigner as anyamazement to the average foreigner as anything else. But it is a fact from which some of them especially interested in shipsome of them especially interested in simp-building hope sooner or later to reap advan-tage. Knowing that they can build ships with cheap, if not pauperized labor, for less money than they can be built in America, they hope that the United States may be induced to tear down the barrier against free ships, a barrier which now serves as the sole protection to a great but languishing industry. This accomplished, they would at once supply our commerce with vessels of any and every description, good, bad and indifferent, and at the same time most effectually deplete the country by the effectual destruction of its most important resources in the event of war with any maritime power.'

The report of Lieut.-Commander Sigsbee upon the newly-invented sounding apparatus, the "attrathometer", has been submitted to the Secretary of the Navy and a copy furnished to the inventor. It appears that further developments and improvements will be necessary before a practical test can be made on the ocean. After these improvebe made on the ocean. After these improvements shall have been made, the Government offers to extend all facilities for a practical test. A general description of this apparatus was given in this correspondence several weeks ago. The principle of the sounding indicator is the earth's attraction. The closer the earth to the ship's bottom, the greater the attraction, and vice versa. The invention if wholly successful, will be

The Cumberland Valley road is substituting the semaphore system of signals for the block-system, and is receiving the articles from the Attoona shops.

Warning to English Iron Workers Not to Emigrate.

We copy the following from the Labor Tribune of October 22:

Since the inauguration of the strikes now pending at different points up to the present, the Amalgamated Association has left no stone unturned to spread the news, and, in an honorable way, gain a victory for its members engaged in such strikes. It has, therefore, been hinted in these columns that the Cincinnati and other firms in that vicinity had sent to England for men. Their objective point, we were informed, would be Leeds. With a view to thwarting the designs of these agents, we sent a cablegram, September 22, to Mr. Edward Trow, gen-eral secretary of the A. A. of I. and S. W. of Great Britain. We are pleased to say that the gentleman very kindly carried out the instructions in the cablegram, and in addition to distributing 20,000 circulars in England, Scotland and Wales pertaining to the strikes, he visited Leeds personally in our behalf, and we feel assured that he and his coadjutors in the cause of union on that side have done all they can to help us to gain a victory. In their monthly publication, the Iron Workers' Journal, of October

I, appears the following:
To the Iron and Steel Workers of England, Scotland and Wales.—Fellow Workmen We have received the following telegraphic message, and are requested to lay it at nce before the workmen of the United Kingdom:

From the Members of the Amalgamated Iron and Steel Workers of the United States to the Iron and Steel Workers of England, Scotland and Wales .- BROTHER WORKERS We desire to inform you that the forge and millmen of Cincinnati, Covington, Newport, Aurora, Terre Haute, Zanesville and Ports-mouth have been for the past 16 weeks, and still continue, on strike against a reduction in wages, and the employers at these works, finding themselves unable to conquer the workmen and enforce their demands, we believe they have now sent to Great Britain to try and induce men to leave that country for the purpose of taking the situations of the men on strike out here. We have reasons for believing that Leeds will be the reasons for beneving that Leeds will be the first place visited by the agents from this country, and to prevent men from being deluded under false pretenses, we send this information for circulation, and request all British workmen not to be induced by the plausible tales of the employers' agents to come to this country and aid their and our common enemy—the capitalist—to defeat their fellow-workingmen, who are fighting for right and justice. Yours fraternally, J. JAHRETT, President.

W. MARTIN, Secretary. We gladly circulate the above informa-tion, and as the interest of labor is univer-sal all the world over, and it needs the combined efforts of workmen of all countries in resisting the attempts of capital to reduce the value of labor so that, while the wealth of the capitalist increases, the sons of toil can scarcely get bread to eat, and suffer privation and misery, and we trust the appeal of our American brother workmen will be successful, and that no workmen from this country will allow themselves to be induced by agent to great the Atlantic for induced by agents to cross the Atlantic for the purpose of blacklegging brave men who are lighting for right and justice, and assist the American employers to defeat American workmen. W. Shaw, President.

E. TROW, General Secretary.

Bursting of a Big Fly Wheel .- A stationary steam engine of 100-horse power in the silk mill of E. B. Atterbury & Co., at Straight and Ellison streets, Paterson, N. J., ran away" on the morning of the 10th and the belt slipping off the 8-ton fly-l soon afterward, the wheel attained a wheel soon afterward, tremendous speed and broke in pieces, which were hurled with immense force through the roof and side wall of the engine room to distances of several hundred feet. Some of the fragments, hurled half a block or more, weighed 500 pounds. The engine had not been used for 10 or 12 years, but had re-cently been overhauled with a view to being set to work on Nov. 1. When overhauling the engine it was found that the cut-off valve was broken and a new one was put in On the morning of the 19th the fireman let in steam to a small engine which was connected with the large one, and the latter at He tried to shut off the once started up. He tried to shut off the steam, but found the valve would not work, steam, but found the valve would not work, and he and another workman both tried to turn the valve. While they were still holding on the belt slipped off and the wheel burst. Neither of the men were hurt, nor was any other person, although a huge fragment of the wheel fell at the feet of the engineer, nearly a block away, as he was walking to the mill. Subsequent examination showed that the new shuttoff valve was tion showed that the new shut-off valve was broken worse than the one it replaced. The damage done is estimated at \$2000.

Prizes to Americans at the Electri-cal Exhibition.—As a mark of the highest distinction, diplomas of honor have been awarded to the United States Signal Office, the Smithsonian Institution, the United States Patent Office and Messrs. Edison, Graham and Bell. Gold medals are awarded ments shall have been made, the Government offers to extend all facilities for a practical test. A general description of this apparatus was given in this correspondence several weeks ago. The principle of the sounding indicator is the earth's attraction. The closer the earth to the ship's bottom, the greater the attraction, and vice versa. The invention, if wholly successful, will be one of the greatest achievements in this wonderful age.

The Pennsylvania Railroad Company, after a trial of four years on most, if not all, the divisions of their road, have decided to adopt the "Ashton noiseless blow-back safety valve," and have ordered 500 sets, with all fittings complete, to be shipped to Altoona.

The Cumberland Valley road is substigued to the Area of the control of the co

The Iron Age

Metallurgical Review.

New York, Thursday, October 27, 1881.

DAVID WILLIAMS Publisher and Proprietor. JAMES C BAVIES . . Editor.

JOHN S. KING . . . Business Manager.

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The telegraphic correspondence between the Amalgamated Association of Iron and Steel Workers of the United States and the Amalgamated Association of Great Britain, elsewhere printed, is interesting. Only one point, however, needs editorial considera-tion. The words, "their and our common enemy-the capitalist "-if not new, are none the less startling. If workingmen who look upon the men who employ labor as their enemies could only read with understanding the old fable of the war between the several members of the human body, they might learn therefrom something worth remembering. Nothing more misleading and mischievous was ever uttered than this talk about the enmity of capital and labor. It is like enmity between the hammer and the hand that wields it; between the mechanism and the power which drives it; between the mind and the body. It requires not even average intelligence to see tha to a large part of the testimony, and it will the vice-president of what is now the Rich- hand, ask no sympathy, for they have had distribution of general merchandise since

operation between labor and capital. There conflict of interest between them, for as society is now organized there seems to be no other way of establishing harmony than by such conflicts. Strikes may sometimes be necessary and desirable as promoting a readjustment of the relations of employers and workmen, and effecting a reapportionment of the proceeds of their co-operation. They could be avoided if both masters and men would agree upon some system of arbitration and conform to its decisions, but for the present this seems to be impracticable. But the workman who looks upon the capitalist as his enemy, or the capitalist who considers that his workmen are his natural enemies, might be called a fool without any violation of the proprieties. The sooner such phrases as "our common enemy, the of the trades unions, the better it will be for all classes of the community.

The Cotton Tie Case at Philadelphia.

The cotton tie case that was on trial at Philadelphia last week, in the United States Circuit Court, before judges McKennan and Butler, was of the greatest importance, not only to the hoop iron manufacturers of the country as being directly involved, but also to all iron manufacturers, as any act that reduces the demand for hoop iron makes the mills equipped for that manufacture competitors in the general iron market. The case was brought by Kennedy Bros., of Louisville, on account of an importation of 9000 bundles of so-called cotton ties. The Collector at Philadelphia assessed duties on them as hoop iron, at 11/2 cents per pound. Kennedy Bros. claimed they were dutiable as manufactures of iron not otherwise provided for, and therefore dutiable at 35 per cent. ad valorem. The alleged excess of duty demanded was \$3972, and suit was brought to recover this amount. These bundles consisted of 30 pieces 15-16 or 1 inch No. 18 hoop iron, covered with paint and with 30 buckles strung on one hoop, all being bound together with bands. The bundles weighed 50 to 56 pounds. The plaintiff contended that these articles had ceased to be hoop iron; that they were not known in the trade as hoop iron, but as cotton ties; that they were bought and sold as such; that under an order for hoop iron, bundles similar to those in question would not be sent; that the fron as it came from the rolls, uncut and unpainted, put up in bundles of 56 pounds, would be sent, and that such hoop iron was what was known commercially as hoop iron. He claimed further that though the so-called cotton ties were made from hoop iron, they could not be economically used for the purposes for which hoop iron is commonly used; also, that the article was a completed manufacture, separate and distinct from hoop iron as known to the law.

The defendant contended that the article in question was nothing but hoop iron; that, though called cotton ties, they were not taken out of the category of hoop iron, but were so called to distinguish a use, the same as barrel hoop, trunk-hinge iron, lock-plate iron, &c., were different varieties of hoop iron, so-called to indicate use; that cutting them to 11-foot lengths did not take them out of the category of hoop iron; that painting them did not, and that stringing thirty buckles on one piece did not, nor did all of these together. Even as cotton ties they were not complete until each piece of hoop iron had been bent at the ends and the buckles attached to each one; that at best the bundles, as imported, were not cotton ties finished and complete, but materials for cotton ties. It was acknowledged that an order for hoop iron would not be filled by sending cotton ties, not because the so-

wanted We have not the space to review the evithe question as to whether the article had been taken out of the category of hoop iron very strongly charged that it had been. The Judgo stated that it was not necessary to attach to each piece of iron its appropriate buckle to make it complete, as stringing them all on one iron was, in fact, the same thing. Under this charge the jury found, as they must, for the plaintiff. The course of the trial had been such as to indicate that the case was going for the government, and the charge of the judge, in view of the testimony, was a complete great stretch of plain and valley has become surprise to the defense at least, if not to the the granary of the modern world. But the plete; that so long as anything remains came east to the seaboard either through the to be done to the article to fit it for its use, pass where the Alleghenies break in New f it is only bending an end of a hoop to fit and Cumberland. Pennsylvania and New it for a buckle, it is not complete, and York have grown rich, while Virginia has Judge McKennan would seem to be wrong in made but little material advance. charging that the cotton tie was complete

production depends upon harmonious co- go up on exceptions. In the meantime it is mond and Allegheny Railroad, became conincumbent upon manufacturers to see that may be at times, and perhaps often, a proper the law is so amended as to leave no doubt as to its intent.

The Freight Blockade in the West.

What may be termed the Central West, or that part bounded by the Alleghenies, the Lakes, the Ohio and the Mississippi, is now, and has been for some time past, experiencing the most serious freight blockade in its history. It seems almost impossible to get freight through. A carload of steel will be five to eight weeks going from Pittsburgh to Louisville, and from Pittsburgh to St. Louis the time is indefinite. For ten days no freight has been received at Pittsburgh for St. Louis, and recently for five days freight was refused for Louisville. Five thousand cars of freight are said to be collected at capitalist," are eliminated from the literature | East St. Louis, waiting transfer into the city. A similar state of affairs exists at Chicago, Cincinnati and Louisville. This large accumulation of freight of course holds the cars, and makes a car famine at points where there is no blockade. This is having a serious effect on the blast furnaces of the section named. It is impossible to get cars to move coke, and furnaces are banking up or blowing out to await supplies of coke. It is also disarranging trade. Goods ordered will be shipped through by the ordinary route of shipment and will be side-tracked" somewhere, for how long no one knows. Stocks at the point of destination will be exhausted, and in desperation the order will be duplicated by some other route, with the result, when both shipments come in, of a surplus stock. The enormous amount of property thus held in transit also disarranges the money market, locking up immense sums of money, and making a more than usually heavy demand for cur-

rency. There are several causes which have produced this state of affairs. Primarily the cause is, of course, the immense volume of business that is being done all over the country. The low rates ruling have created a desire to get goods forward while they are uniting these two roads requires the concontinued. The stage of water in the Ohio has been such that the hundreds of thousands of tons of freight that are usually shipped at this season of the year for the West and Northwest, have had to seek rail routes. It is also true that the railroads have not prepared for this business. They have believed that when they had arranged to move the freight and had provided the rolling stock, there would be no difficulty in handling the business, and this heavy traffic has found them with little or no increase in terminal facilities. The platforms, stations and appliances are the same as before; the force at these terminal points has not been increased to take care of the freight as it comes in, and the blockade is the result. This makes more manifest the need that has been pressing itself upon the attention and occupying the thought of railroad men for many years-better terminal facilities. With plenty of space the necessary platforms for receiving and discharging freight can be built and business taken care of, but in the large cities space is valuable. We do not know that any method could be devised for the more rapid and economical handling of freight which would demand less space than now appears to be needed, but this is one of the great problems of railroad management, and the demands of the future will necessi tate some change. What room is needed must be had. Time is worth more than land,

A New Trunk Line of Railroad.

however costly the latter may be.

A hundred years ago Washington tried to impress upon his countrymen the great need of a canal that should unite the waters of called cotton ties were not hoop iron, but the James and the Ohio. He had scarcely because they were not the kind of hoop iron closed his duties as commander-in-chief of by no other railroad. Its future promises to our armies before he called the attention of his native State to the importance of this dence at length. It was largely technical, water-way. His several journeys west of its incalculable resources of mineral and its and involved some nice distinctions that the the Alleghenies had convinced him that the jury, who were very intelligent, did not route was practicable, and his great mind eem to grasp, nor did the judges. The foresaw the future empire that was to have charge, which was delivered by Judge its seat in the Ohio Valley. It was his pur-McKennan, made the case turn wholly on pose that the commerce of this empire which must seek the seaboard should flow through and pay tribute to his native State. and made a manufacture of iron, and it was This was the origin of the James River and Kanawha Canal Company which, under the name of the James River Company, was organized in 1785, and has for nearly a century been stretching out to the passes of the Alleghenies, but has never reached them. While this dream of Washington has been unfulfilled, this great empire of the Ohio Valley, or more properly, the Mississippi Valley, has grown to a power and influence of which Washington never dreamed, and this plaintiff. It certainly does seem that an vast traffic that has come with it did not seek article is not complete until it is com- the route that Washington marked out, but no matter how small the work may be, even York, or was lifted over them at Altoona

vinced that the canal scheme that had cost by rail that the waters of the two valleys should be united. He impressed his views on several gentlemen, prominent among whom was Mr. F. O. French, of New York, who became the president of the railroad that has been completed. The more difficult task of convincing the State and other owners of the old canal was undertaken. It was successful, and the bill authorizing the sale of the James River and Kanawha Company's works to the Richmond and Allegheny Railroad became a law in 1878, and on the 5th of March, 1880, the final contract between the two companies was executed. Track laying was commenced on the 8th of July, 1880, at Maiden's Adventure, and on Friday afternoon, the 14th of October, 1881, the last rail as laid on the Lexington division, the main line having been completed nearly a month before. This is rapid work, but the road is well built with steel rails, iron bridges, stone viaducts, and the lowest grade of any road of equal length on this continent. It passes through a country that has been developed by the canal, and occupies an immensely rich mineral district. Upon the 250 miles of railroad there is a first mortgage of \$20,000 per mile, and for equipment a few of the second mortgage bonds have been placed. It has entrance into the heart of Richmond. and the property the company has in that city could hardly be duplicated for one-half the mortgage debt. The property and franchises of this road are immensely valuable, and as a local road its future was assured. But its projectors would have fulfilled neither the hope of Virginia nor the scheme that their own good judgment told them was necessary, had they stopped in the heart of the Alle ghenies at the head of the James. They projected a line not only to the Ohio, but to the great lakes, and arrangements have been made for a consolidation with the Ohio Central, which runs from Toledo through the Hocking Valley to the Ohio. This will involve the building of a road from the end of the James to the Ohio. The project of struction of 270 miles of new road, including a bridge across the Obio. Contracts have already been let and the money has been provided with which to build about 140 miles of this road, leaving about 135 miles to be provided for

The surveys are complete and final location are made for all except about 30 miles of the lighter work. The route leaves the Richmond and Allegheny at Eagle Rock, 215 miles from Richmond, and follows the valeys of Craig's and Sinking creeks to New River, 62 miles; thence through the valley of New River past Hinton to Gauley, 86 miles; thence through the valley of Great Kanawha to Point Pleasant, 106 milesmaking a distance from Richmond to the Ohio River of 469 miles. The distance from the Ohio Central to the Ohio River is 48 miles. The line will have a summitlevel 50 feet lower than the Chesapeake and Obio and lower than any line south of the Erie, and from the Ohio River to Richmond the minimum grade east or west will be 30 feet. The line crosses the Pittsburgh coal seam at Raymond City; passes through Charleston and Malden and all the salt furnaces of Kanawha. It passes the great operated coal mines at Campbell's Creek, Cannelton, and Hawk's Nest, and west of Hawk's Nest there is business enough already developed to sustain the road.

This road is of more than usual importance It gives another great trunk line East and West, and will compete with the New York Central, Erie, Pennsylvania and Baltimore and Ohio lines for the trade of the West. It will pass through some of the fluest coal and iron regions on the continent, and by its Virginia connections and a road that will undoubtedly be built to Pittsburgh, will no other railroad. Its future pron be very successful; and the section it traverses, with its bounteous fertility of soil, unexcelled water power, is a sure warrant that a great industrial power will be built up along its line, and new centers of manufacturing and commercial activity be established in districts now lying outside the busy circle of our national activities.

Describing the commercial situation with reference to the restricted business transacted in produce in the New York market as a result of speculation, and the less confident and hesitating disposition manifested in some quarters, the case is concisely stated Tribune of last Friday says: "The people by Bradstreet's in the following words:

This unmistakable and significant reaction from the remarkable buoyancy of the late summer and early autumn months has been traceable, in great measure, to the influence of the enormous and accumulating supplies of breadstuffs and provisions at the West and on the seaboard; to the ver slow and unsatisfactory forwarding move slow and unsatisfactory forwarding movement from the interior at a time when extraordinary advantages are available in the way of abundant and very cheap transportation facilities, and to the discouraging decline and demoralization in the export trade, as resulting from the recent formi dable speculative disturbances in produce valplacing our markets almost continuously above the parity of prices in Western Europe our markets almost continuously much

Aside from the evils inflicted upon the This month has witnessed the completion public at large in the shape of exorbitant when the 30 buckles were all attached to of the old and the beginning of a new chapter prices for all sorts of breadstuffs and the genone band. We are not advised as to the in the history of this project. The canal course the government will pursue in the has been finally abandoned, and its place falls upon all in any way concerned in lake ase, but presume it will be taken to the has been taken by a railroad, which, on the and canal transportation, whose business for Supreme Court. The District Attorney, who handled the case very ably, took exceptions length of the James River. H. C. Parsons, The railroad corporations, on the other

their tracks free all summer for general transportation and are guaranteed an excluso much must be abandoned, and that it was sive traffic in grain through the coming winter-perhaps on an enormous scale and at their own rates.

Three Great Steamships.

The three great steamers, City of Rome, Servia and Alaska, belonging to the Inman, Cunard and Guion lines respectively, will all arrive in New York within a few daysindeed the first-named has already arrived. The length of these steamers, in the order named, is 546, 530 and 520 feet, taking rank in point of size only second to the Great Eastern, and in speed they will probably attain 171/2 knots, against only 14 knots for their famous predecessor. All three are built of steel. The City of Rome has two complete iron decks above, while the lower deck is complete for half the length, and has wide plating on each side for the remainder. The deck houses and turtle decks on the upper deck are of iron. The three engines are set "tandem," and drive a single screw propeller 24 feet in diameter. The crank and screw shafts are of fluid compressed steel, the former being 25 inches in diameter, and weighing 63 tons, or 11 tons less than if of iron. A feature mentioned in the steam department of this vessel is that its engines can be reversed from full speed ahead to full speed astern in five seconds by an improved mechanical device. As a fact, this same device was adapted to the American Line vessels built by William Cramp & Sons, of Philadelphia, nine years ago; so that the invention may be claimed as purely American, and has been extensively used on American-built vessels since that time.

The City of Rome arrived in this port on Monday, the 24th inst., having sailed from Liverpool on the 13th—a passage which can-not be called short, even for a first one. Her friends are somewhat chagrined to find that the Arizona, leaving Liverpool on the 16th inst., arrived before her. The Inman people claim that the new steamer is the largest afloat, choosing to ignore the Great Eastern entirely. The test of speed is hardly conclusive, the new engines being "stiff," and from the particulars at hand it does not seem improbable that the vessel was driven too hard, the results of which were seen in the several stoppages necessary in order to cool bearings and keep the engine at work. The tonnage of the City of Rome is 13,000 tons, that of the Great Eastern 22,000, and the latter vessel is at least 100

feet longer.
The Servia will have a cargo capacity equal to 6500 tons, with 1800 tons of coal and 1000 tons of water ballast, the vessel having a double bottom on the longitudinat bracket system. Hor engines are on the compound principle, with one high pressure and two low pressure cylinders. . There are seven boilers, made of steel, with 39 corrugated furnaces. The hull is divided into nine water-tight compartments. A special feature of the vessel is the arrangement of the water-tight doors in the engine and boiler spaces. These can be shot from the upper deck in case of accident, and they essess this advantage, that they can b closed in about two seconds, while the usual style requires the door to be screwed down. which takes considerable time. The deck is of steel, covered with yellow pine; the main deck is of steel covered with teak, and the lower deck is of steel with a teak covering above the engine and boiler spaces. All the deck houses and fittings, which are liable to be carried away in a heavy sea if made of weaker material, are made of steel and iron, and are riveted to the steel decks underneath. Nearly all of the other lines have new ships building, the Red Star having ordered four, and others are known to be only awaiting the results of actual trial in the instances mentioned above before giving out additional contracts. The experience already had with the Arizona and Elbe shows what rapid strides have been made in ocean navigation within the last few years.

Trade Accounts.

The latest accounts respecting domestic trade are all favorable, at least in the chief wholesale markets. The effects of drought are more or less the subject of complaint, but ample compensation for shortened crops is found in the high prices realized. St. Paul papers speak of the remarkable extent and activity in merchandise sales, and the samo feature is remarked elsewhere in the Northwest, the stimulus being due to a good harvest and full prices. The Minneapolis of Minnesota and Dakota, and of fractional portions of other Northwestern States, are exceptionally fortunate in that they have harvested good crops, and are now receiving for their surplus a scale of prices so surprisingly high as to surpass the dreams of the most sanguine and satisfy the greed of the most grasping. Last year, following harvest, No. I wheat sold at our railway stations at 68 to 75 cents. This season the same grade started off at 90 cents and rapidly rose to \$1.35, at and near which figure a large volume of grain has been marketed.' In Boston, according to the Prices Current of Saturday, sales in most branches of business are considerably in excess of last year's at the corresponding date, and in some classes of goods, such as stoves, crockery and furniture, orders are more than can be conveniently filled. In Philadelphia, the

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manufactured articles there is an improvedescriptions of manufactured iron exceeds steel. that of any previous season. In Baltimore the volume of business done by jobbers is spoken of as very satisfactory. In Canada there are expectations of an active trade during the next four months, as the agricultural classes have been able to obtain better prices for their products than usual. On all sides the outlook is cheering.

Course of the Tin Plate Market.

Tin plates have fluctuated a great deal less this year than they usually do, the change in price from one month to another seldom exceeding 25 cents per box. The average price of ordinary brands at the beginning of the year was \$5.67, and on Oct.

The following tables will show the range of prices of tin plates in former years: AVERAGE PRICE OF TIN PLATES (ORDINARY BRANDS) AT NEW YORK ON THE 1ST OF EACH MONTH, 1879

18	79-
January. \$5.33 February 5.70 March. 5.75 April 5.67 May. 5.66 June. 5.42	July \$5.50 August 5.40 September 5.53 October 6.66 November 7.28 December 7.21
x8	80.
January \$6.11 February 8.72 March 5.63 April 8.00 May 6.75 June 5.88½	July \$5.49 August 5.76 September 5.78 October 5.46 November 5.40 December 3.36
***************************************	PRICES.

July 1, 1874. April 28, 1876. May 5, 1877. September 7, 1877. October 19, 1877. December 20, 1877. December 21, 1877. January 1, 1878. The highest point, it will be seen, was reached at New York last year, in March. under the impulse of speculation. Since then it has gradually settled down to about

the ruling on Oct. 12, 1881. In England coke tin has of late been recovering from the price of 16/. The average price at Liverpool was, for coke tin, 22/8 per box in 1875, 19/6 in 1876, 17/8 in 1877, 15/1 in 1878, 19/5 in 1879 and 18/8 in 1880, the average of the ten years ended Dec. 31, 1880, being 23/. The British export movement is shown in the following

TOTAL EXPORT OF	TIN PL	TES FROM GREAT B	RITAIN.
Year.	Tons.		Tons.
1871	119,606	x876	133,564
1872		1877	153,226
1873		1878	155,240
1874	132,960	x879	197,849
1875	138.363	1880	217.600

From the above it will be seen that the exportation has nearly doubled in the short space of nine years. Production this year has varied very little from that of 1880. The stocks at Liverpool, which were 360,000 boxes on Jan. 1, 1881, were reduced to 260,000 on Oct. 1, while in the rest of England the stock was estimated at 150,000 boxes. Shipments to the United States during the first nine months of 1881 were coal mine at Coultersville, Allegheny County, were convicted of conspiracy in speaking to boxes. Shipments to the United States 2,230,000 boxes, against 2,235,000 during the corresponding period of last year. At the same time, the increase of shipments to other countries was, as compared with 1880, some 30,000 boxes. Last year these shipments to other countries were small, because in 1879 they had been excessive.

The stock at New York is an average one, being 180,000 to 200,000 boxes. Consumption in this country has been good, except for fruit canning grades, which has fallen off materially in consequence of the poor fruit and vegetable crops by reason of the

the improvement in value lately going on in the Anchor Savings Bank, of Pittsburgh, for the Anchor Savings Bank, of Pittsburgh, for \$400, to cover the costs and fines in both ruling at about present prices tin plates are ruling at about present prices tin plates are consumed very extensively, superseding other material for many uses; it is, thereSenator Cowan, their council said there fore, to be hoped that speculation may not run them up again, as was the case two years ago, involving loss to the dealer and consumer in the end.

One of the leading metal statisticians here figures up, from table3 specially prepared, that during the past seven years the import of coke tin plates into the United States has been 50 per cent. of the entire amount, that of ternes 24 per cent., and that of charcoal bright 26 per cent. Cokes are chiefly consumed for cans, ternes for roofing and charcoal bright for tinware. Our present import averages about 3,000,000 boxes of all sorts annually, of which cokes at the above rate would, therefore, represent one-half, or 1,500,000 boxes. Of these, 500,000 are used for oil, 750,000 for fruit preserving, and 250,000 for various other purposes of canning, &c. Now, this gentleman estimates the falling off for fruit canning consequent upon the drought at 20 per cent., which would constitute a lessened consumption of cokes of 150,000 boxes. We have consulted another firm in this line, and hear that, so far as their trade indicates, the demand for coke thus far shows no such falling off. the near future will solve.

The consumption of rails in Germany in 1878 was 1,218,660 tons. The correspond- rail to local furnaces.

the beginning of the fall season has been ing consumption in 1879 was 586,110 tons, above the average, and in the values of and in 1880, 852,700 tons, making a total for the three years of 2,657,530 tons. Nearly ment in some cases. The demand for all the whole of the rails thus consumed were

> For many years strikes were almost unknown in France. This was partly due to the workings of the admirable system of conciliation and arbitration in operation in that country in its Conseils des Prud'hommes, and partly to the laws against organization and conspiracy of workingmen. Latterly, however, strikes have been more frequent, especially in those localities in which these Conseils do not exist. Some of these have had features that have been nearly, if not quite, unknown in the history of strikes in other countries. A few moths ago a strike of factory operatives occurred at Roubaix. The Town Council was composed of a majority of workmen. The subject of the strike was brought before it, the men were declared by vote to be in the right, and the Council actually voted 50,000 francs to support the The subsidy was not paid, how strikers. ever, the Prefect, who has an absolute veto, exercising his power to prevent it. A similar case happened in the Department Allier, the Town Council taking the same action, in this instance, however, voting only 25,000

> Confusion arises from the similarity of names adopted by the Industrial League, headquarters in Philadelphia, and the Industrial League of America, an organization lately created in Chicago. The latter has been peculiarly unfortunate in seeking a distinctive title, and Mr. Cyrus Elder, secretary of the original institution, only discharges an obvious duty in suggesting that Mr. John A. Norton, secretary of the Chicago association, drop that part of the title that had been already appropriated by another organization.

General Dumont, the Supervising In spector of Steam Vessels, is about to recom mend in his annual report a reduction in the tax on steamboat officers, which is represented to be very oppressive and unneces sary. The tax varies with the rank of the officer, but averages about \$7.50 per capita every year. The amount already accumulated from this source reaches \$649,320far beyond the necessities of the public ser The suggestions of General Dumont vice. should be favorably acted upon by Congress at the approaching session.

The Railway Review calls our attention to the fact that in our issue of Oct. 13 we credited the article on "Excessive Railway Building," page 9, to the Railway Age instead of to the Railway Review, from which it was taken. The article was a valuable one and we are glad to give the credit to the proper source.

Enforcing the Conspiracy Law in Pennsylvania.—A dispatch from Green-burg, Pa., under date of October 23, says: Some months ago D. K. Jones, General Sec-retary for the Mines of Western Pennsyla meeting of strikers at the mine to induce them to remain out. Yesterday both men were called up for sentence before Judge than for punishment. The law makes the imprisonment and fine imperative, and he would therefore be compelled to impose a sentence, and he hoped that after this Mr.
Jones would be careful and not interfere with the men while at work, but let the men fruit and vegetable crops by reason of the prolonged drought.

From what precedes it will be seen that the position of tin plates is favorable, for they are comparatively cheap, the more so since tin has been rising so rapidly. This fact has not failed to attract attention; hence Senator Cowan, their council said there was absolutely no escape, and both were placed behind the bars. The case will be brought before the Supreme Court to-morrow. The paper book is already printed and everything is ready for the argument this week. Ex-Senator Cowan will make the argument in behalf of Jones. Jones and Anderson were both released this afternoon, and left for Pittsburgh.

> The following is the programme of the meeting of the Mechanical Engineers, to be held in this city on the 3d prox. :

THURSDAY, NOVEMBER 3. ternoon session, Turf Club Theater rening session, Turf Club Theater

FRIDAY, NOVEMBER 4. Morning session, Turf Club Theater ... 10 a. m. Afternoon session, Turf Club Theater ... 2 p. m. Subscription dinner, Delmonico's, 212 Fifth avenue ... 7 p. m. 7 p. m.

The iron ore shipments from Lake Su-perior continue to be in excess of the pro-duct of last year. Should the same ratio of increase be maintained till the close of navigation, the total lake shipments will aggregate very nearly, if not quite, 2,250,000 tons. The lake shipments during the last six weeks of 1880 amounted to 306,427 tons, coke thus far shows no such failing off. It and the ratio of increase, if maintained, is, therefore, a debatable question, which ought certainly to add at least 450,000 tons to the lake output already reported for the present season, to which there will remain to be added at least 100,000 tons shipped by

AMERICAN INSTITUTE MINING ENGINEERS.

HARRISBURG, PA., October 25, 1881. The fall meeting of the American Insti ute of Mining Engineers met to-night to be gin what promises to be a very pleasant and profitable session. The attendance is large and representative, and although the heat of the past summer seems to have had the effect of discouraging the preparation of papers, the meetings will not lack scientific interest, while the opportunity afforded of visiting the metallurgical establishments and mines in the vicinity of Harrisburg, will be agreeable and instruction to all who will be agreeable and instructive to all who are here.

The opening session was held in the hall of the Young Men's Christian Association, president Wm. Metcalf, of Pittsburgh, in the chair. Mr. Jones Wistar, on hehalf of the local committee, introduced the Mayor of Harrisburg, who made a brief address of welcome. He was followed by Lieut. Gov. Stone, who, in the absence of Gov. Hoyt, also welcomed the Institute with well-chosen and eloquent words, dwelling upon the extent and value of the mineral resources of Pennsylvania, and the im-portance of the work of the mining engineer and the metallurgist in building up her great industries. Mr. Metcalf responded briefly, but effectively, to the addresses of welcome, and then opened the meeting with a few words addressed especially to the younger members. He said, in effect, that one of the most encouraging evidences of the success of the Institute, and most promising indications of its future, was the presence at recent meetings of the younger men in the membership. This was encouraging, as it gave promise of the continued usefulness of the Institute. The work before the young men of the profession represented by the Institute was varied and interesting, and there were evidences that it was appreciated. He suggested several topics calling for invetigation, among others the dangers connected with electric lighting—not only the fire risk attending the carrying of wires into buildings, but the danger to life as well. Mr. Metcalf concluded by calling attention to the pres ence in the meeting of Mr. E. P. Martin, of Blenævon, Wales, and Mr. E. Windsor Richards, general manager of Bolckow, Vaughan & Co.'s works, who would speak by invitation on the history and practical development of the basic process. He congratulated the membership or hoving this constraint membership on having this opportunity of hearing from these gentlemon. The younger men of the Institute would prob-ably see, and perhaps aid materially in promoting, a metallurgical progress which would rob such impurities as phosphorus, sulphur and silicon in ores of all importance, and give all ores, of whatever chemical composition, a value in proportion to the iron units they contain.

The next business of the meeting was the election of members, and upward of sixty gentlemen, more or less prominently con-nected with mining, chemistry, metallurgy and engineering, whose names had been passed upon by the council, were elected.

The first paper of the session was read by Mr. S. H. Chauvenet, of the Pennsylvania Steel Company, which is of so much interest that we give it in full :

THE INDUSTRIES OF HARRISBURG.

Harrisburg is situated on the Pennsylva nia Railroad, 105 miles from Philadelphia, 235 miles from Pittsburgh, and 90 miles from Baltimore, and has running through it the Pennsylvania, Northern Central, Phila-delphia and Reading and Cumberland Valley Railroads, and the Pennsylvania Canal. Surrounded by a thickly settled farming country from which to draw native labor, within easy distance of anthracite and bituminous coal, with ores and limestone near at hand, and with the Susquehanna River as a never-failing water supply, Har-risburg has advantages for manufacturing which warrant the investment of the capital that has already been made, and has a future as a manufacturing city second only to Pitts

burgh and Philadelphia.
The Pennsylvania Steel Company.—L. S. Bent, superintendent. The works of this company, the largest in Harrisburg, lie between the Pennsylvania and the Philadelphia and Reading Railroads, on the Penn-sylvania Canal, and are essentially devoted to the manufacture of Bessemer steel rails. Capital stock, \$2,000,000; invested in busi ness, \$5,000,000; wages per month, \$80,000; of rails per year, which is being increased to 130,000 tons. The plant, as it now stands, comprises 5 Bessemer converters, 2 7-ton and 3 8-ton converters, 2 15-ton open-hearth furnaces in operation and 2 30-ton openhearth furnaces in course of construction, I blooming mill, I rail mill, 7 steam hammers, 2 blast furnaces in operation, 2 blast furnaces in course of construction, foundry, pattern shop, machine shop, blacksmith shop, and frog shop, and merchant mill in course of construction.

Bessemer No. 1 was built in 1865, with

2 7 ton converters, 2 spiegel cupolas 3 feet diameter, and 3 iron cupolas 6 ft. 6 in. diameter, and has a capacity of 500 tons in 24 hours. The blowing engine is a o in. diameter, and has a capacity of 500 tons in 24 hours. The blowing engine is a horizontal condensing engine, with 2 steam cylinders, 40 x 60 in., and 2 blowing cylinders, 54 x 60 in. Pressure of blast,

from 20 to 25 pounds.

Bessemer No. 2 was built in 1881. It has 3 8-ton converters, served by 2 hydraulic ladle cranes in 2 casting pits, and 6 hydraulic cranes for setting and drawing molds, hand-Bessemer No. 2 was built in 1881. It has 3 8-ton converters, served by 2 hydraulic cranes for setting and drawing molds, handling bottoms, &c. The hydraulic pressure is 300 pounds per square inch. The blowing engine is a compound horizontal with a high pressure cylinder, 25 x 70 in., and low pressure, 50 x 70 in., with separate airgump condensers, and also a Bulkley condenser attached. Pressure of blast, 25 to 30 pounds. This engine was built in the Pennsylvania Steel Company's shops. There are are 4 fron cupolas, 6 ft. 6 in. diameter, and 4 spiegel cupolas, 3 ft. diameter, thorn by 2 No. 7 Baker blowers, or two 3-cylinder blowing engines. The capacity of this Bessemer has not yet been determined, as it has only been in operation two weeks. There are many points of improvement over the old Bessemer which cannot be described in this paper for want of time. All the castings,

boilers, roofs, wrought iron work and engines of this plant were made and erected by the

Pennsylvania Steel Company.

The blooming train is three high; rolls 34 in. in diameter, driven by a vertical condensing engine, 44 x 54-in. cylinder. The capacity of this mill has never been determined. mined, but is easily 600 tons in 24 hours. The ingots are delivered hot to the blooming mill from the Bessemer, and charged into 4 Siemens heating furnaces, 6 ingots being a charge for each furnace. The ingots are 14 inches square and make 4 rails each. The blooms are cut under a 4-ton steam hammer (Sellers), and are loaded by a hydraulic crane on buggies, which are pulled by a water engine to the rail mill.

The rail train is three-high; rolls 23 in.

The rail train is three-high: rolls 23 in. diameter, driven by a 40 x 60 in. engine, with Bulkley condenser attached. This nails, I puddle train, 81 nail machines. The train has rolled 1916 rails in 24 hours. The saw train is Gustin's patent. Two straightening presses and 2 drill presses handle the rails as fast as rolled. The open-hearth furnaces, which were enlarged later to 15-ton capacity. The new complexity for ton capacity. The new open-hearth furnaces in course of construction are each naces in course of construction are each 30-ton. Each furnace has a casting pit, and the two are served by five hydraulic cranes. A 14-ton steam hammer is cranes. A 14-ton steam hammer is placed between the blooming mill and rail mill. Under it heavy shafts, cross-heads and piston rods are forged. When not in use for heavy work it hammer: special steel into slabs and billets. Λ 4 tor hammer, adjoining the blooming mill, and a 1-ton hammer in the rail mill are used almos exclusively for slabs and billets.

The foundry, 60 x 225 ft., has two cupolas ft. diameter, 2 core ovens and 5 15 ton steam cranes. All ingot molds are made 5 ft. diameter, 2 core ovens and 5 15-ton steam cranes. All ingot molds are made here, and all castings for repairs and new work. The capacity of the foundry is 40 tons of finished castings a day. The pattern shop has 2 circular saws, I Daniel's planer, I hand planer, a bandsaw and I lathe, and bench room for 14 men. The machine shop is 75 x 230 ft., and contains 13 lathes, from 96 x 10 in.; 5 planers, which take from 8 ft. square to 20 in. square; 1 48 in. boring lathe, I 84 in. boring and turning machine, 3 10-ft. radial drills, 2 drilling machines, 2 shapers, 2 slotting machines, 2 horizontal boring machines, 2 bolt cutters, I pipe cutter. The blacksmith shop, 60 x 75 pipe cutter. The blacksmith shop, 60 x 7! ft., contains 2 1000-pound steam ham mers and 14 fires. The boiler shop, 7: x 125 ft., contains 3 drill presses, 2 shears, 1 punching machine, bending rolls and hydraulic riveting machine. In this shop all steam boilers, draft stacks and iron roofs are built. The frog shop, 60 x 400 ft., has a interlocking apparatus. It contains 1,4 planers, 6 drill presses, 2 slotters, 2 lathes, I milling machine, I shaper, I pin machine, I steam hammer, I combined punch and shear, I single punch, I steam riveter, I hydraulic bending machine, 10 fires and I heating furnace. A new frog shop is to be put up immediately, 80 x 400 ft., with improved facilities.

facilities.

Blast furnaces—No. 1, 14 x 60 ft., is blown by a vertical condensing engine, 84-in. blowing cylinder, 48-in. stroke. It has 4 pipe ovens of Kent's pattern; the fuel used is anthracite coal and coke; the ores used is anthracite coal and coke; the ores are native Pennsylvania, Virginia and New Jersey, and Spanish and African. The product is 50 to 60 tons per day. No. 2, 20 x 76 ft., is blown by two vertical condensing engines, 84 x 48 in.; 3 Whitwell stoves, 18 x 60 ft.; fuel and ores are the same as No. 1; product, 840 tons per week. The product of both furnaces is used in the Bessemer. No. 3 and No. 4 blast furnace are each 16 x 65 ft. They are to be blown by vertical condensing engines. furnace are each 10 x 05 ft. They are to be blown by vertical condensing engines, 70 x 43 in., 2 blowing cylinders to each engine, with capacity for 22,000 cubic it. of air per minute. These engines are being built by the Pennsylvania Steel Company, Each furnace has 3 Whitwell stoves, 10 x 60 ft., and will use the same fuel and ores as New 1 and 2. A merchant mill is in course ft., and will use the same fuel and ores as Nos. 1 and 2. A merchant mill is in course of construction. The building, 100 x 400 ft., will contain 1 12-in. roll train, and 1 20-in. roll train; the first driven by a horizontal Hughes & Phillips engine, 22 x 30 in., the second by a horizontal Porter-Allen engine, 22 x 13 in. The beating furness are result. 32 x 48 in. The heating furnaces are Sweet's

THE LOCHIEL ROLLING MILL COMPANY .driven by a 42 x 42 in. vertical engine. by the Pennsylvania Steel Company. The blooms are heated in 8 coal furnaces, and the capacity of the train is 750 rails in 24 hours. Puddie train, 19 in. diamrails in 24 hours. Puddie train, 19 in. diameter, driven by a 24 x 48 in. engine, with 12 double puddling furnaces; product, 45 to 50 tons in 24 hours. But train, 16 in. diameter, with 2 heating furnaces; product, 22 to 25 tons per day. Guide train, 9 in. diameter, with 1 heating furnace; product, 11 to 15 tons per day. But train, 16 in. diameter, with 1 heating furnace; product, 18 to 20 tons per day. The bar, guide and but trains are driven by 1 engine, 32 x 32 in. Blast Furnace—One stack, 14 x 52 ft., closed top, pipe ovens; fuel, anthracite coal and top, pipe ovens; fuel, anthracite coal and coke; ores, fossil, Cornwall and Dillsburg gives employment to from 60 to 120 men. and mill cinder; product, 7500 tons per lt has a large local trade; but its principal

IRON WORKS OF THE McCormick Estate .-

-No. 1 stack was built in 1855, 14 x 50 ft. blown by an 84 x 84 in. engine; pipe oven in use, but Whitwell stoves are now in course of construction. The product is 10,000 tons per year. No. 2 stack was built to coo tons per year. No. 2 stack was built in 1872, 15 x 60 ft.; blown by 84 x 84 in. engine; 3 Whitwell stoves; fuel, anthracite coal and coke; ores, York County, Pa., magnetic, Cornwall, and fossil ore from Juniata County, Pa. The product is 22,000 tons per year; about 300 men are employed at both furnaces.

CHESAPEAKE NAIL WORKS.—Charles L. Bailey & Co. Capital invested \$500,000; employ 300 men, and pay \$165,000 wages annually. The plant consists of 16 single annually. The plant consists of 16 single puddling furnaces, 3 heating furnaces, 3 reheating furnaces for nail plates, 2 bluing furnaces, 1 annealing furnace for clinch nails, 1 puddle train, 81 nail machines. The

plant consists of 5 double and I single puddling furnace, 3 heating furnaces, I puddle mill, a plate train (3 high rolls), 32 in diameter, driven by a 36 x 60-in. en The product is 8000 tons plate iron and ons muck bar. Plates 88 in. wide, and ordinary lengths from number 10 to 1½ in. thick are rolled in this mill This firm is now putting in another plate train, 25 in. diameter, 3 high, driven by a 25 x 60 in. horizontal engine.

HARRISBURG CAR MANUFACTURING CO.-W. T. Hildrup, superintendent. Capital stock, \$500,000; invested in business, \$1,oco,000; employs 800 men; amount of monthly pay roll, \$26,000. The number of cars built is 12 to 15, with a daily consump-tion of 30 tons of charcoal iron, 15 tons of anthracite iron, 40,000 to 45,000 ft. of lumber and 15 tons of bar iron. The average value of cars is \$600, and the total yearly product about \$2,500,000. This company one of the most prosperous in Harrisburg, has a blast furnace, which is being remodeled. Its sawmill is the largest in the city. led.

Foundry and Machine Department of Harrisburg Car Manufacturing Co .- In this establishment are manufactured portable and stationary engines, all kinds of foundry and boiler work, and agricultural imple and boller work, and agricultural implements of various descriptions. Its capacity is one portable engine per day, and 10 tons of foundry castings, also an annual production of 500 corn planters. The number of

men employed is 175. THE WISTER BLAST FURNACE.—This fur-nace was built in 1867, originally 14 x 45 ft., are built. The frog shop, 60 x 400 ft., has a but recently altered to 14 x 60 it. It is capacity of \$30,000 to \$40,000 per month in blown by a 30 x 48 in. horizontal engine, railroad frogs and switches, crossings and geared to drive two blowing cylinders 72 x 72 in. This engine blows 260 cubic feet of air per stroke, and is capable of running 30 to 35 revolutions per minute, at a pressure of 6 to 7 pounds of blast. There are three batteries of boilers, two of which give ample ateam power. Two Kent 8-inch pipe ovens heat the blast to 1000° or 1100° F. Only one oven is blown through, leaving one in reserve. Fuel, M anthracite, M coke; ores, Dillsburg, Seizholtzville, Cornwall, and for two years past, about one-third from Spain and other foreign countries. Capacity, 45 tons per day. This is a very complete furnace, and one of the most successful in the Susquehanna

> THE LOUISE FURNACE.—W. H. Woodward & Daniel King, proprietors This furnace was built in 1875, but was not blown in until 1880. The stack is 10 x 50 ft., blown by a 60 x 60 in. horizontal engine, with pipe ovens, built by Raymond & Campbell, of Middle town, Pa. Fuel, anthracite coal and coke; ores, hematite from the Cumberland Valley, and Dillsburg magnetite. The product is from 120 to 130 tons per week.
>
> HUMMEL, FENDRICK & Co.—This firm has

> lately begun the manufacture of bar iron and tires. The plant consists of a small merchant train and two heating furnaces.

Jackson Manufacturing Company.—
James I. Chamberlin, president; James
Jenkins, secretary and treasurer. The
business of this company, which has recently
been reorganized and incorporated, is the
manufacture of a wide range of mining implements. At present they manufacture only steel barrows. This product is shipped chiefly into the mining regions of the West, large consignments being constantly made to Pueblo for mining purposes in Colorado. Henry M'Cormick, president. This company has a capital stock of \$400,000, and ber of barrows. Capital invested, \$50,000; employs from \$50 to 600 men. The plant present capacity of works, 15 to 20 steel consists of a rail train, 19½ in diameter, barrows per day, employing 20 to 25 hands. arrows per day, employing 20 to 25 hands HARRISBURG CHAIN WORKS.—Joshua W

Jones, proprietor. This industry has been but recently established in Harrisburg, and the above works are not yet fully completed. At present only 4 furnaces are in operation, but 8 others will soon be erected. The principal product will be chain bale ties, and the capacity of the works is estimated at 3000 per month. A small Baxter engine is moloved to drive a fan for fires, and an oven (8 x 2 x 6 ft.) is used for japanning the chains. Twelve men are employed.

EAGLE WORKS. — This establishment is wned by Mr. W. O. Hickok, and has been in operation about 25 or 30 years. It embraces a machine shop fitted up for doing all kinds of machine work, an iron foundry, a product is a class of machine work-ruling product is a class of machine work—ruling machines, ruling pens, sawing machines, press boards, table shears, &c.—that is ex-tensively sold in Europe, South America, Cuba and Australia.

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W. B. BELKNAP & CO., Louisville. MICHOLS & DEAN, St. Paul.

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Are forged from a solid bar of steel, Afford a firm level bearing, thereby securing to the horse the most natural position for comfort and speed. Is a self-cleaning shoe, and will not "ball up." Equally good for summer or winter use. Will prevent horses from "calking" or growing corns. Can be resharpened as readily as

OPINIONS.

OPINIONS.

I do not hesitate to give it as my opinion that it ombines more excellences than any I have before een. It provides a solid base under all circumstances, for the horse while standing or traveling; as no rocking motion while the animal is turning, nd possesses eleven calks to protect him from alling. I have never seen the inventor of this improvement, but I desire, in the interest of the notest animal living, to thus thank him for the good is shoe is likely to bring him.

HENRY BERGH, resident the American Society for Prevention of Crueity to Animals, New York.

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MAD MULLER.

Mad Muller, on a summer's day
Raked the meadows sweet with hay.
Beneath his straw hat glowed a glare
That filled with brimstone the morning air,
Swearing he worked, till his oaths so free
Frightened the birds from bush and tree.
His breath gave out and he took a rest,
But a longing f. r vengeance filled his breast,
A wish that his tongue was free to own
That something better than he had known
Would keep his hogs at eve and morn,
From rooting the seed from his fields of corn.
A neighbor drove slowly down that way
And stopped, just to pass the time of day.
He drew his reins in the oak tree shade,
And, looking around him, slowly said—



"What makes you stand such rooting and things.
When to stop it you only need Hill." Hoe Rings?"
Mad Muller listened, a glad surprise
Beamed from his lately blazing eyes.
He bought the rings and he tried them on.
And a victory over those logs he won.
No longer as mad a fland was he,
As he walked abroad his corn to see,
For each big hog, with a ring in his snout,
Was slowly and harmlessly grunting about.
And the corn it sprouted and bravely grew,
And made a big crop, as corn should do,
And as he looks at his fields, he then
Softly whispers "It might have been
That I in the fall would have no corn to show
Had Hill's Hoo Rings (Triangular) not helped
me so,"
And to all of his neighbors the praise he sings,
Of the man who invented those blessed Hog Rings.



Of HILL'S TRIANCULAR HOG RINGS have been sold in nine years, consuming 550,000 pounds of wire, measuring 3400 miles.

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I. M. ALLEN, President.

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OANIEL, PHILLIPS, of Adams Express Co.
OANIEL, PHILLIPS, of Adams Express Co.
OANIEL, PROSIDENT OF CO. Manufacturing Co.

THOMAS O. ENDERS See'y Ætna Life Ins. Co.

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LEVERETT BRAINARD of Case, Lockwood & Brainard.

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This cut represents the interior of the Tuyere, showing the rotating air tubes through which four different sized currents of air may be passed, thereby making any sized fire from two to 18 inches in 18 inches in diameter; for instance, if a large fire is be ing used and next job should be a nail rod, we do not move or burn the large of coal MORGAVS RIABLE BLAS FERE

@ @ but turn the small tube up and so concen

trate the heat to the point desired.

The constant flow of water keeps the Tuyere cool and prevents cinders or clinkers Tuyere cool and provents character from forming in the fire. To prevent the water from freezing in the pipes, the barrel is supplied with a faucet that empties the pipes but not the borrel. All the dirt from the fire sifts through the perforated fire cap into the dirt box, from which it is blown by the blast when the ball valve is raised for that purpose. I also furnish Tuyere Irons without water attachment. See first issue of the month.

After having used your "Variable Blast Tuyere fron" three months, I pronounce it perfect in every respect, and it actually saves from 25 to 50 per cent. of the coal. CHAS. VAN HORN, Earlville, Ill. Send for price list and discount.

A. W. MORGAN, Patentee and Manufacturer, Office, 52 Vance Block, Indianapolis

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Chain Pump, Tube, &c., ELMIRA, N. Y. A NEW PATENT WEDGE GRIP FOR TESTING MACHINE.

I'H. B. Richlé, of the firm of Richlé Bros., Philadelphia, has just received Letters Patent for a very simple, but ingenious, improvement in a holding device for flat specimens in a Testing Machine, doing away with the unsatisfactory ball and socket and round back lines, which have proved failures. It consists in slightly elevating the bitting face of wedge through its center longitudinally. It will be seen at a glance that this will render it an impossibility to tear or twist the specimen in process of testing. This improvement, together with those already contained in this make of Testing Machines, makes them unrivalled. Attachments for obtaining elongation and the limit of elasticity of specimens furnished at slight cost.



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Unsurpassed for heapness and dura-lifty. Unlike any bufty. other make, it combines a perfect lever principle with a blade working in a slotted steel hook. Send for illustrated

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designed to be attached to any Barrel or Cask, acreby converting the same into a temporary Tank, acreby converting the same into a temporary Tank, and with an effective Pump, and while protecting ontents from dirt and waste, the owner has entire ontrol of same, by simply locking the cover. It entirely does away with the labor and waste ttendant upon emptying Barrels into any of the umerous Metal Tanks, while securing all the conceptiones of the same, at a generally reputed coornumerous Metal Tanks, while securing all the conveniences of the same, at a GREATLY REDUCED COST.

The Apparatus can be adjusted in a few moments to a Barrel of any size, and as quickly shifted to another when contents are exhausted, the process of connecting being very simple.

It is as compact in form as is consistent with perfect efficiency, and we feel confident that a trial will demonstrate its practical value.

Who has use for it? EVERY ONE

Who buys in bulk any of the various kinds of Oils, or in fact any Fluid that can be Pumped;

Every Mill, Factory, or Work-Shop, where Oils or ther fluids are used, and every store where such luids are retailed, will find the "CLIMAX" just what they require.

PANCOAST & MAULE, Nos. 243 & 245 SO. THIRD STREET,

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The Iron-Masters' LABORATORY

Analysis of Ores of Iron, Pig and Manufac tured Iron. Steels, Limestone, Clays, Slags and Coal for Practical Metallurgical Purposes. No. 339 Walnut St., Philadelphia.

With Branch at Warrenton, Virgin J. BLODGET BRITTON.

This laberatory was established in 1866, at the intence of a number of practical Iron Masters, excessly to affect prompt and reliable information pon the chemical composition of the substances bove mentioned, for smelting and refining purcees. The object being to make it at once a concenient, practically useful, and comparatively inexensive adjunct to the Furnace, Forge and Rolling III.

CHARGES TO IRON WORKS. currence of unusual occurrence or difficult to determine, the charge must necessarily depend upon circumstances. For determining the per cent. of Sulphur or Phosphorus in Iron or Steel.

For each additional constituent of usual occurrence.

For each additional constituent of Lime, and insoluble Silicious Matter in a Limestone. 10.00 or each additional constituent 2.00 or the per cent of Water, Volatile Combustible Matter, fixed Carbon, and Ash in Coal. 12.50

For determining the constituents of a Clay, Slag, Coke, or of an Ash in Coal the charges will correspond with those for the constituents of an ore. For a written opinion or letter of instruction the charge must necessarily depend upon circumstances. stances.

Printed instructions for obtaining proper average samples for analysis furnished upon application W. Buehler, treasurer. These works were built in 1869 and have been in successful operation since that date. They manufacture fire-brick for blast furnaces, steel works

and rolling mill use, and have a capacity of 2,000,000 bricks per annum, which amount could be readily increased. The clays used are from the several well-known deposits in New Jersey, and from Clearfield, Clinton, Dauphin and Lebanon Counties, in Pennsylvania. All the fire-bricks are made of these several clays combined in various proportions, as best suits the intended use. A 40 horse power engine is employed in grinding and mixing the clays. The works give employed in the combined of t ployment to 30 hands.

HYDRAULIC CEMENT PIPE WORKS -Henry HYDRAULIC CEMENT PIPE WORKS—Henry J. Beatty, proprietor. These works have been in successful operation during the past 18 months, manufacturing cement drain pipes and cement ware or artificial stone. The product is sold throughout the whole of Central Pennsylvania. The capacity of the works is 25,000 ft. of drain pipe per annum. The capital invested is \$15,000, and the works give employment to 12 men.

HARRISBURG COTTON MILL.—Geo. Calder.

HARRISBURG COTTON MILL. -Geo. Calder.

The lumber and saw-mill interests are quite large in Harrisburg and vicinity, and there are two large sash, door and blind factories. There are also two flouring mills, owned by the McCormick estate—the Paxton Mill, with a capacity of 400 barrels per day by the new process, and the Lochiel Mill, with a capacity of 100 barrels per day.

The tries they were arrested and charged with conspiring to molest, intimidate and annoy Sherman & Co. in their date and annoy Sherman & Co. in their rels per day.
BRUSHER, McCULLOCH & Co.—This firm

have recently begun the manufacture of handles for axes, picks, &c. Capacity, 150 dozen handles per day. Employ 40 men.

correspondent is unable to send it in shape for publication at this late hour. The follow-

Thursday.

At a a.m. the institute takes an excursion rain to visit the hematite ore mines of the Philadelphia and Reading Coal and Iron Company, the Carlisle Iron works, the hematite ore mines on the South Mountain nematic ore mines on the South Mountain Railroad, Laurel Forge and Pine Grove Fur-nace, lunching at Pine Grove, as the guests of Mr. J. C. Fuller. Returning they will visit the Indian School at Carlisle, reaching Harrisburg in time for an evening session.

NEW PUBLICATIONS.

ENGINEERS POCKET BOOK, for 1882. By Mr. P. Stühlem, Deutz, Germany. Essen: Baedeker. This little volume has appeared annually for the last seventeen years, and has met with the entire approval of the engineer-ing profession. The success of the under-Ing profession. The success of the dinder-taking has encouraged the author in his laudable efforts for the diffusion of im-portant information regarding mechanics, architecture, steam engines, boilers, &c. In the present edition valuable additions have been made, comprising metallurgical data, and the classification of iron and steel conforming with the resolutions adopted by the "Yerein deutscher Eisenhüttenleute." Heating and ventilating, as well as the subject of windmills and the dynamometrical determination of privary have also been treated of mations of power, have also been treated of more extensively than has been the case heretefore. An inspection of the little book is advisable, and will more fully convince the reader of its merits.

The Meisterschaff System. A simple and practical method of learning to speak French, German, Spanish and Italian. By Dr. Richard S. Rosenthal, unlike other linguists, proposes to appeal directly to the ear, the tongue and the memory, instead of appealing to intelligence, which, though it superintends the whole process of mastering foreign sounds, can only really be said to come into action when these have become our mental and bo fily property so fully and entirely that we begin to think in them just as readily as in our own vernacular. His system combines the good features of all modern methods, and follows at the same time nature's own way as closely as possible. A glance at the first few pages of the lessons will show how he teaches the student lessons will show how he teaches the student

nuual capacity of 500 tons. The Wilson Innufacturing Company are manufacturers and his rules, strictly followed, will undoubted agricultural implements, and make a edly lead to the most perfect success, as Manufacturing Company are manufacturers of agricultural implements, and make a variety of castings. proved by the experience of thousands of HARRISBURG FIRE BRICK WORKS.-George his pupils.

LABOR AND WAGES.

A committee from the Knights of Laber, on the 20th, waited on the bottle and window glass manufacturers, of Pittsburgh, and gave notice that the "fillers-in" and "teasers" demanded an advance of 15 per cent. in wages. Unless their demand was acceded to they were to mit walk the next marking. to they were to quit work the uext morning.
The strike, however, was a short one. Saturday there was a meeting and the difficulty was amicably adjusted, the men returning to work at an advance of \$1 per week.

The South Side tableware manufacturers

of Pittsburgh have voluntarily advanced the wages of their employees 10 per cent. In the Quarter Sessions Court of Philadelphis, on the 21st inst., Judge Allison presiding, Eugene Vallette, Thomas S. Coon and Daniel McNamara were heard on a writ of Daniel McNamara were heard on a writ of habeas corpus, the charge against them being conspiracy. They were a committee appointed by the Typographical Union after a resolution by the union that certain rates should be increased from \$14 to \$16 a week, HARRISBURG COTTON MILL.—Geo. Calder, Jr., proprietor. This mill was built some 25 years ago. It has 8000 spindles and 280 looms, with a capacity of 2700 bales cotton, producing cheviots, drilling, four-shaft twills, duck, warps, yarns, &c. The number of hands employed is 260, and the monthly pay-roll amount to \$4500.

The lumber and saw-mill interests are quite large in Harrisburg and vicinity, and they are two laws, seek down and kind and they were arrested and charged with conspiring to molest, intimidate and annoy Sherman & Co. in their date and annoy Sherman & Co. in their

giving an opinion.

The strike at the rolling mills of Cincinnati continues, and the men who are out are firm in their demands for an increase in wages over Pittsburgh prices. A conference was held at the office of Mitchell, Tranter & Co., dozen handles per day. Employ 40 men.

The chairman thanked Mr. Chauvenet for the valuable information contained in his paper, and hoped the example would be imitated in other cities. Hethen introduced Mr. E. Windsor Richards, who, by invitation of the council, had consented to give some account of his experience with the basic process. Mr. Richards' remarks contained go now facts, but they described the war were willing to concede to that decision, amms and methods of the process very clearly they could go to work next Monday, otherbasic process. Mr. Richards' remarks contained no new facts, but they described the aims and methods of the process very clearly, and were listened to with the greatest interest. As an understanding of what he said depends upon the reproduction of some of Mr. Richards' blackboard sketches, your correspondent is unable to send it in shape for publication at this late hour. The following is the programme for the remainder of the meeting:

Wednesday.

There will be a morning session for papers and discussions at 9 a.m. At 11.75 a.m. the members will take an excursion train, provided by the Pennsylvania Railroad, to visit the Pennsylvania Steel Works, Lochiel Rolling Mill, Paxton Furnace, Paxton Rolling Mill, were instructed to accept nothing less than

The laborers on the Pitteburgh, McKeesport and Youghiogheny Railroad, who struck for an advance of 15 cents per day last week, have resumed at the old figures.

The Wheeling bricklayers and hod-carriers have struck against the employment of nonunion men.

visit the Indian School at Carlisle, reaching Harrisburg in time for an evening session.

Priday.

There will be a morning session for papers and discussion, followed by an excursion to Coal Brook Furnaces and the Cornwall Ore Banks, with lunch at Lebanon as the guests of the Cornwall Ore Banks Co. In the evening the members will be entertained by a bit aims of from the commercial agency of obtained from the commercial agency of obtained from the commercial agency of obtained from the commercial agency of Coal Brook Furnaces and the guests Banks, with lunch at Labanon as the guests of the Cornwall Ore Bank Co. In the evening the members will be entertained by a complimentary dinner tendered them by the Pennsylvania Steel Company. This will end the meeting, which, as will be seen, is found to be false. Thereupon an action for decait was begun against the defendant, deceit was begun against the defendant. The latter claimed that he was not liable, because the representations as to the standof his firm had not been made directly to the selling house. The Court of Appeals holds that this is no defence, and that an action can be maintained against a person making false representations to a commercial agency by any subscriber to the agency who has been thereby deceived. "If a per-son," says the opinion, "furnishes to such son, says the opinion, intransic such an agency a willfully false statement of his circumstances or pecuniary ability with intent to obtain a standing and credit to which tent to obtain a standing and credit to which he knows he is not justly entitled, and thus to defraud whoever may resort to the agency, and, in reliance upon the falso information there lodged, extend a credit to him, there is no reason why his liability to any party defrauded by these means should not be the same as if he had made the false representation directly to the party in-

> The Mayor of Philadelphia, in consequence of the recent lamentable loss of life by the burning of a woolen mill in that city, has issued an order to the owner or owner's ten-ants or agents of all factories, manufacants or agents of all factories, manufac-tories or workshops of any kind in which operators or employees are employed at work, requiring them immediately to pro-vide and cause to be fixed to their several buildings permanent fire escapes.

Advices from Rio to the 15th ult. state that the Bank of Brazil had adopted the following rates of interest for money deposited: By bills at two and three months, 21/2 per

nt. per annum; by bills as four and five onths, 3 per cent. per annum; by bills six eleven months, 3 % per cent. per annum; y bills at twelve months, 4 per cent. per



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SPRING CALIPERS AND DIVIDERS

Also, Surface Gauges and Counter Sinks, Stevens' Patent Breech-Loading Sporting Rifles, double and single barrel; Shot Guns, Pocket Rifles, Pocket Pistols, and the noted Hunters' Pet

SHOOTING GALLERY RIFLE

Is the favorite everywhere.

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WEYMOUTH'S PATENT.



This knife is the best in use for cutting down hav and straw in mov and stack, cutting fine feed from bale, cutting corn stalks for feed, cut

ting peat and ditching marshes.

The blade is best cast steel, spring temper, easily sharpened, and is giving universal satisfaction. A few moments' trial will show its merits, and parties once using it are runwilling to do without it. Its sales are fast increasing for exports as well as home trade, and it seems destined

to take the place of all other Hay Knives.

They are nicely packed in boxes, one dozen each of 50 pounds weight, suitable for shipping by land or water to any part of the world.

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Delusion Rat and Mouse Trap,



Manufactured by CLAUDIUS JONES & CO., ERIE, Penna.

This is the only Self-setting Trap on the market, and the most successful.

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MORSE TWIST DRILL AND MACHINE CO. I

Morse Patent Straight-Lip Increase Twist Drill, Beach's Patent Self-Centering Chuck, Solid and Shell Reamers,

BIT STOCK DRILLS, DRILLS FOR COES, WORCESTER, HUNTER AND OTHER HAND DRILL PRESSES. BEACH'S PATENT SELF-CENTERING CHUCKS, CENTER AND ADJUSTABLE DRILL CHUCKS, SOLID AND SHELL REAMERS. DRILL GRINDING MACHINES. TAPER REAMERS, MILLING

CUTTERS AND SPECIAL TOOLS TO ORDER. All Tools exact to Whitworth Standard Gauges.

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ELBA IRON BOLT CO., Limited. MANUFACTURERS OF

MERCHANT IRON. BAR

Skelp Iron, Splice Bars, Railway Track Bolts, Car, Bridge, and Machinery Bolts, Nuts, &c.

We invite the attention of RAILROAD MEN especially to our make of SPLICE BARS and Track Bolts. Using the best brands of REFINED IRON, and paying close attention to the finish of our manufactures, we are enabled to offer our patrons BOLTS, NUTS, SPLICE BARS, &c., of excellent quality. Our works have been enlarged within a few years; all orders are now executed with promptness; all our work guaranteed.

SEND FOR PRICE LISTS AND INFORMATION TO ELBA IRON & BOLT CO., Limited, Pittsburgh, Pa. Armstrong's Improved Adjustable Stock and Dies FOR PIPE AND BOLTS.



Tapped to the U. S. and Whitworth Standard Gauges. Adjustable to all variations in the size of ags. Can be resharpened without drawing the temper by simply grinding them. Possessing practical advantages appreciated by all mechanics. Circular and Price List sent free on application.

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SOLE MANUFACTURERS SILVER STEEL DIAMOND X CUT SAW

INDIANAPOLIS, IND.

THE



Counter Scales,

R. R. Depot Scales, Track Scales,

Rolling Mill Scales, Warehouse Scales, Elevator Scales

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BUFFALO SCALE CO.,

BUFFALO, N. Y., Manufacturers of

R. R. Track Scales, Hay Scales, Cos Scales, Grain Scales, Platform Scales, Counter Scales, &c. Send for price list, stating what you want.

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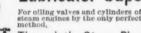
AND TESTING MACHINES

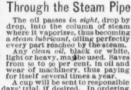
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Office, 98 Griswold St., Detroit, Mich.
First Prizes at Fair American Institute and Millers'
nternational Exposition, Cincinnati, 188.
NOTE.—In our recent sult against the American Luricator Co., of Detroit, before Justice Stanley Mahews, of the U.S. Supreme Court, involving their
ght-feed feature, a decree was rendered in our favor
ugust zo. 185.



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THE SMITH & EGGE MFG. CO.

"Superior in Every Respect." ils is one of the **best selling Locks** in the market, affords the dealer a large profit. It is thoroughly strongly made—of the best material—very hand-e in appearance, and every Lock is warranted. Lock Box 1705, Bridgeport, Conn.

FLANDERS' PATENT Portable Crank Pin Machine. For Turning off Crank Pins in Position and while



L. B. FLANDERS MACHINE WORKS,

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Over 1000 machines in use, Are used by all leading stove-manufacturers. Experienced men sent to put up machines and instruct pur-

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We call attention to infringements of the Waston Machine in which Automatic Switches are used to prevent change of current. The Weston Co. are owners by grant or purchase of all forms of Automatic Switches for Plating Machines. The adoption of these machines will certainly lead to great loss to parties purchasing or using them.

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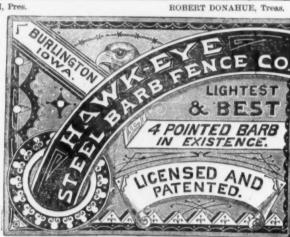


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Made of Plated Wire. Durable and Handsome.

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ST. LOUIS WIRE FENCE CO., The Frentress Barb Wire Fence Co., 814 & 816 N. Second St., St. Louis, Mo. East Dubuque, Illinois.

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ANSONIA, CONN.,
Manufacture improved ROCK & ORE BREAKERS,

view of Rock Breaker.

View of Rock Breaker.

Tweaty years of practical test, at Home and Abrond, has enjayened for the purpose. Bit, St. Marsbey, for the past fifteen and the process of this department of the purpose. It, St. Marsbey, for the past fifteen past fifteen and the purpose. It is a first the purpose. It is the purpose of this department of the purpose. It is a first the purpose of the past fifteen purpose purpo

Tweaty years of practical test, at Home and Abroad, has proven this machine to be the best of ever-invented for the purpose. Mr. S. L. Mansber, for the past fifteen years connected with the manufacture of the machines, has charge of this department of our works, and will personally superintend their er tion within a reasonable circuit. Chilied Rolls and Rolling Mill Machinery; Power Presses, sin and double acting; also, Hammers, brops and Lifters: Shafting, Pulleys and Hangers.

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SAFETY PIN AND CURTAIN HOOK MACHINE.



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PRENTISS' PAT. VISES. Adjustable Jaw.

Stationary and Pat. Swivel Bottoms. Adapted to all kinds of Vise Work. Sold by the Trade.

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A General Variety of these goods, all of Very Best Material and of Unquestioned Merit.

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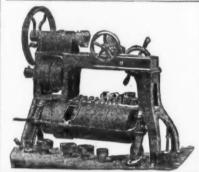
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For Scythes, Axes, Knives and Turpories at Pike Station, N. H., Factories at Fire Construction and Evansville & Westmo Genuine Old Reliable, Indian Pond (Red End), Premium, Union, White Mountain, Letolie, Hacker, Diamond Grit, The New Bosses, Willoughby Lake, Green Mountain, Green Mountain, Green Humannd,



The most perfect Dinner Pail in the world. Hot coffee for dinner and a Lantern at night. Manufactured by JOS. HAIGHT, PORT CHESTER, N. Y. Sent by express on receipt of \$1.00. Agents wanted,



R. Onderdonk, LEVER LEMON SQUEEZER, With Perforated Strainer 405 Grand St ,

BELLAIRE NAIL WORKS.

PIC IRON AND NAILS,

Manufacture the Celebrated Brand of

BELLAIRE NAILS.

Office and Works,

Bellaire, Ohio.

PECK & SNYDER'S PATENT SELF-ADJUSTING AMERICAN CLUB SKATE.



(LICENSED UNDER ALL BARBED WIRE PATENTS.) Manufacturers of

FOUR-POINTED BARBED WIRE FENCING.



CABLES AND BARBS, WARRANTED ALL STEEL.



WOODEN FAUCETS.

Cork Lined, first quality, warranted. Metallic Key, Ignumvitæ Key, Rosewood, Red Cedar, Cherry and John Sommer's Metallic Key and First Quality Cork-Lined Faucets are the best. Send for catalogue.



IRON, STEEL and BRASS. JOHN FELLOWS,

BLAKE CRUSHER CO., New Haven Conn.



sor to LYON & FELLOWS.) Factory and Office, 14 Durham Place, Williamsburgh, N. F. BLAKE'S Challenge Rock Breakers.



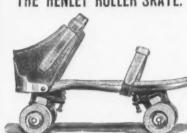
George N. Pierce. BUFFALO, N. Y.,

Measuring Tapes | Bird Cages & Refrigerators

Prices quoted upon application to BUTLER & DIEL, agents at Syracuse, N. Y.; OPEN STOVE Hammer's Adjustable Clamps, VENTILATING CO., 28 Beekman st., New York, or GEO. N. PIERCE, sole manufacturer, Buffalo, N. Y.

WHOLESALE AGENTS. L. SCHILLENGER, Syracuse, N. Y.
PRATT & CO., Buffalo, N. Y.
PRATT & CO., Elmira, N. Y.
EATHBONE, SARD & CO., Detroit, Mich.
H. W. LENTKEMEYER, Cleveland, Ohio.

Pat. Oct. 16, 1880, THE HENLEY ROLLER SKATE.



The latest and best light running, easily adusted, perfect. The Challenge Skateof the world. For price list and further particulars address M. C. HENLEY, Patentee & Manufer,

HAMMOND'S AQ Window Springs sashes—all sizes. Are very tent, simple and durable. to the Trade free. W. S. HAMMOND,

Patented Articles of Malleable Iron.

Hammer's Malleable Iron Oilers.



Hammer's Mall. Iron Hand Lamps. Hammer's M. I. Hanging Lamps. **NEW** pattern Heavy Screw strongest in the market. or sale by all the principal Hardware Dealers.

Send for Price List. Malleable Iron Castings superior quality, and Hardware Spe Malleable Iron made to order.

HAMMER & CO.,

BRANFORD, CONN. CHAMPION WEATHER STRIPS.

The Best in the Market. For Sale by all Hardware Dealers.



Also manufacturers of Wood Carpet, Show Case, and Cabinet Moldings, &c.

DENNIS & CO., 167 Madison St., CHICAGO, ILL. Factory, 337 and 339 W. Lake St.



THE PATENT SCREW WINDOW BALANCE

Special Notices.

SECOND-HAND & NEW MACHINERY

October 27, 1881. The following New and Improved Machinists' Too

are part of what we have for future delivery : \$ 22-in, swing, 12 ft. bed, Engine Lathes. October b 22-1n. swing, 13\(^2\)ft. bed, Engine Latine. October.
1 22-ln. swing, 13\(^2\)ft. bed, Engine Lathe.
1 22-ln. swing, 13\(^2\)ft. bed, Engine Lathe.
2 18-ln. swing, 8\(^2\)ft. bed, Engine Lathe.
3 18-ln. swing, 10-ft. bed, Engine Lathes. October.
1 5\(^1\)ft. swing, 6\(^2\)ft. bed, Engine Lathes. October.
2 28-ln. swing, Upright Back Geared Drilla. October. The following for prompt delivery:

The following for prempt delivery:

I 21-in. swing, 16f. bed, Engine Lathe.

J 20-in swing, 15ft. bed, Engine Lathe. Secon

I 18-in. swing, 16ft. bed, Engine Lathe. New.

I 16-in. swing, 8ft. bed, Engine Lathe. New.

I 15-in. swing, 6 ft. bed, Engine Lathe. New.
I 13-in. swing, 6 ft. bed, Engine Lathe. Second-hand.
I 12-in. swing, 5 ft. bed, Engine Lathe. Second-hand.
I 12-in. swing, 5 ft. bed, Engine Lathe. Second-hand.
I 12-in. x 4½ ft. Hand Lathe. Flain.
I 10-in. x 4½ ft. Hand Lathe. Flain.
I 10-in. x 4½ ft. Hand Lathe. Plain.
I 10-in. x 2½ ft. Foot Lathe. Second-hand.
I 10-in. x 2½ ft. Foot Lathe. Second-hand.
I 10-in. x 2½ ft. Foot Lathes. Second-hand.
I 10-in. x 2½ ft. Foot Lathes. Second-hand.
I 10-in. x 2½ ft. Foot Lathe. Second-hand.
I 10-in. x 12½ ft. Foot Lathe. Second-hand.
I 10-in. Shaping Machine Heavy. Second-hand.
I 10-in. Shaping Machine Heavy. Second-hand.
I 12-in. Harris Upright Drills. Second-hand.
I 12-in. Starken. Second-hand. Second-hand.

Jean Dillia hosy: Second and sin.

Pratt & Wilney Cam Cutter, 2 heads. Second hand.

Manhattan Arms Co. Millers. Second-hand.

Manhattan Arms Co. Millers. Second-hand.

Manhattan Arms Co. Millers. Second-hand.

Pond Index Milling Machine. Second-hand.

1 Face Milling Machine. Second-hand.

1 Garvin Milling Machine. Second-hand.

2 Garvin Milling Machine. Second-hand.

2 George Control of Profile Second-hand.

2 George Control of Profile Second-hand.

2 Cock Grinding Machine. Second-hand.

2 Verised Centering Machine. Second-hand.

2 Verised Centering Machine. Second-hand.

2 February Grinders. Second-hand.

3 Emery Grinders. Second-hand.

5 Ellers Tool Grinder.

2 Files Cutting Machine. Second-hand.

3 Files Criting Machine. Second-hand.

4 Files Criting Machine. Second-hand.

5 Files Forcing Machine. Second-hand.

1 Hor. Boring Machine. Second-hand.

1 Hor. Boring Machine. Second-hand.

1 Hor. Boring Machine, 50 in. swing.; 3f. bed.

1 Hor. Boring Machine, 50 in. swing.; 3f. bed.

1 Hor. Boring Machine. Second-hand.

1 Horstontal Boring Machine. Second-hand.

2 Lot Pistol Machinery. Second-hand.

2 Lot Pistol Machinery. Second-hand.

2 Single-Acting Presses. No. 3. nearly new.

4 Single-Acting Presses. No. 3. nearly new.

4 Single-Acting Presses. For power, nearly new.

4 Modium Power Funching Press. Second-hand.

5 Foot Punch, with bench. New.

1 Tatt's Power Shear. 4 in. blade. nearly new.

1 Tatt's Power Shear. 4 in. blade. nearly new.

1 Corld-Roled Bastline. Pullers. Hanger. Countines.

Cold-Roled Bastline. Pullers. Hanger. Countines.

cus' Indicator.

Forpes, I Band Saw, 1 Jig Saw, 1 Double Saw
1 is in Buzz Planer, 1 Staf Tenoner, 1 Railway
nch, 1 Foot-power Circular Saw,
Tolled Shaffing, Pulleys, Hangers, Couplings,
ays in 8400.

The Geo. Place Machinery Agency, 121 Chambers and 103 Reade Sts.,

NEW YORK.

The Sherman Process Co

9 Pemberten Square, Boston, Mass. Issue Licenses to use the Process for the Manufacture of Iron and Steel

n the Bessemer Converter, Crucible, Siemens Martin, Puddling, Blast and Cupola Furnaces. The use of this Process improves the quality of the product, saves fuel and labor, and does not re-quire any change in furnace or manner of working. See page 17 of The Iron Age of Oot. 25th, 1877.

FIRE BRICKS

FOR IMMEDIATE DELIVERY.

36,000 per Steamahip Titania, due now.
49,000 per Steamahip Rialto, due Oct. yo.
10,000 Scotch Bricks, due Oct. yo.
25,000 per Steamship Wm. Burkitt, due Nov. 8.
RIMINGTON BROS. & CO., Newcastle-on-Tyne.
8. A. RIMINGTON, Agent,
40 Broadway, New York.

Hardware Business For Sale.

Ten years established. Stock is clean and wel assorted. City is growing very fast; large amoun of building now in progress. Address
W. C. ROGERS,

Manchester, N. H. \$25,000 Wanted.

A practical mechanical partner, to purchase one-third interest in a large, well known and flourishing manufacturing business in Philadelphia. A rare opportunity is here presented for a young me-chanic to enter a business established for 20 years. Address, with rull name and address, A. B. D., Office of *The Iron Age*, 200 S. 4th st., Phila., Pa.

Wanted.

A Special or Active Partner in the Wholesale Hardware business, with \$100,000, to purchase the interest of senior partner retiring January 1, 1882. Business located in one of the principal cities of the West; established for 40 years and doing a profitable business. Address Adress Adress.

Office of The Iron Age, 83 Reade, St., New York.

Wanted.

VERTICAL BORING AND TURNING MILL, new or second hand, to swing 7 to 12 feet. State maker, time of delivery, price, age, condition, and where it can be seen. Address

N. PORTZ & CO.

MINING ENGINEER WANTED

to take charge of one or more Hematite Ore Mines, in a healthy location. Must be experienced, of good habits, and thoroughly acquainted with mining In levels and on surface. State full partic-ulars as to age, experience, and where formerly operating. Address, MINING ENGINEER, Box 25, Office of The Iron Age, 83 Reade st., New York.

WANTED—From Jan. 1, 1882, situation as sales man with stamper ware manufacturer, by one who has had 15 years' experience.
Address, TINWARE, Office of The Iron Age, 83 Reade St., New York.

WANTED-By January next, a Superintendent in a Lock and Fardware Factory. With the right man liberal arrangements will be made. Address, Office of The Iron Age, 83 Reade St., New York.

WANTED.—Position as superintendent. Have occupied that position and contractor in a private armory for over 10 years. Is a practical machinest, tool maker and designer of special machines and tools for interchangeable work. Can give the best of references.

DESIGNER, Office of The Iron Age, \$3 Reade St., New York.

Special Notices.

New and Second-Hand

MACHINERY. 320 Acres of Valuable Coal and Min-

One Horizontal Engine, 15% in. x30 in. Todd & Raf-

One Horizontal Engine, 3 in.x6 in.
One Beam Corliss Engine, 5 on H. P.
Portable Engines from 12 to 25 H. P.
Two Horizontal Return Tub. Boilers, 100 h. p. each.
One Hor Tubular Boiler, 6 ft X14 ft. 67 4-in. tubes.
Two Hor. Tub. Boilers, 4½ ft.x13½ ft., 43 4-in. tubes.
One Locomotive Steel Boiler, 30 h. p.

MACHINISTS! TOOLS.

MACHINISTS' TOOLS.

Eleven Lathes, 22 in. x 12 ft. New,
Five Lathes, 13 in. x 8 ft. New,
One Lathe, 17 in. x 8 ft. New,
One Lathe, 17 in. x 8 ft. Lincoln.
Five Lathes, 16 in. x 6 ft. Wood & Light.
One Lathe, 16 in x 6 ft. Blaisdell.
Two 6-in. Shaping Machines, 6 oin. x 8 ft.
One Planning Machine, 50 in. x 8 ft.
One Milling Machine, No. 4. Wood & Light.
One Burleigh Rock Drill, No. 4. New,
One Hotchicks Compressed Air Hammer, 40 lbs.
One Pipe Cutting Machine.
One Styles & Parker Foot Press,
One Bliss & Williams Foot Press,
One Desk, Stow & Wilcox Foot Press,
One Cameron Steam Pump, No. 2.
One Knowles Special Pump, No. 7.
One 6 in. Tapping Machine,
One 100 training Machine,
One 100 training Machine,
One 100 training Machine,
One 100 training Machine,
One pair Paper Rolls.
A large stock of Shafting, Pulleys, Hangers, Vises
(Wrought and Cast), and other Miscellaneous
Machinery.

GRAY'S MACHINERY DEPOT 37 Dey Street, New York, U. S. A.

Proposals for Lamps, Lanterns, Brack ets and Extra Parts of Lamps, &c., for the U. S. Army.

for the U. S. Army.

Depot Quartermaster's Office, |
PHILADELPHIA, PA., October 10, 1881. |
SEALED PROPOSALS in triplicate, subject to
the usual conditions, will be received at this office,
and at the offices of each, the Depot Quartermaster at New York City, Jeffersonville, Ind., and San
Francisco, Cal., until 12 o'clock noon at this office,
12-05 p. m. at New York City, Jeffersonville and 8.51 a. m. at San Francisco, on
Monday, November 14, 1881, at which times and
places they will be opened in the presence of bidders, for furnishing and delivering 2500 Army
Lamps complete (single burner); 2500 Cast Malleable iron Brackets; 2500 Brass Nickel-plated Roflectors, with their supports; 4500 Extra Glass
Chimneys and 6500 Extra Wicks for these lanterns; and 6500 Extra Wicks
for these lanterns; and 6500 Extra Wicks
for these lanterns; and 6500 Extra Wicks
for these lanterns; and 6500 Extra Wicks
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for these lanterns; and 6500 Extra Wicks
for these lanterns; and 6500 Extra Wicks
for these lanterns; and 6500 Extra Wicks
for these lanterns; and 6500 Extra Wicks
for these lanterns; and 6500 Extra Wicks
for these lanterns; and 500 Extra Mills
for 101 Lanterns are intended for use of Mineral Oil of the standard having flash point not
lower than 135 Fahrenheit. Bidders will submit
samples properly labeled or tagged, of the Lanterns (Oil and Candle) which they may propose to
furnish.

Bidders will state in what quautities and at what
Depots they will make deliveries, and how soon
they will commence and complete delivery of each
lot bid for. The Lamps, Brackets, Reflectors and
extra parts must be of prescribed specifications,
and patterns as shown in drawings. Proposals
will be received for a less quantity of the supplies
than herein mentioned. The Government reserves
the right to reject any or all proposals. A pre

extent of the suppues required in the vice there.

Blank proposals and specifications, and instructions to bidders, and any further information that may be desired, will be furnished by either of the Depot Quartermasters mentioned, on application. Proposals should be addressed to either the Dep it Quartermaster at Philadelphia, New York City, Jeffersonville or San Francisco, and be endorsed, Proposals for Lamps, or whatever is biddened.

D. H. RUCKER, Ass't Q. M. Gen., U. S. A., In charge of depot.

Wanted.

A competent man in every city of the Union to sell on commission W. Heyn's Patent Improved Glass Tube Cutter. None but responsible parties need apply to

WM. HEYN, San Francisco, Cal.

Wanted.

By an engineer of extensive experience, thorough knowledge, exemplary habits and satisfactory personal and professional credentials, a position as superintendent or manager of an iron or steel rolling mill. A thorough, practical acquaintance with all departments of rolling mill work guaranteed. Address, MANAGER, Office of The Iron Age, 83 Reade St., New York.

Wanted.

A Medium Sized Rolling Mill

| Also one large roll lathe at a great bargain. | POPE IRON AND METAL CO., St. Louis, Mo. Building

in good repair. In answering advertisement give size, how long built, present condition and price asked. Address, 72 Washington St., Chicago, Ill.

Wanted.

To arrange with responsible parties having proper facilities and experience for the manufacture of some improved wood-working machinery, destined to meet extensive sales when thoroughly introduced. For further particulars, address Office of The Iron Age, 83 Reade St., New York.

Wanted.

\$3000 to \$5000 Working Capital (with or without services), to work a valuable Magnetic Iron Ore Mine that will pay 50 per cent. on the investment. Only those with cash and meaning business address. Magnetic. Office of The Iron Age, 220 S. 4th St., Phila., Pa.

Wanted.

An Experienced Mechanical Draughtsman.

THE BURDEN IRON CO.. Address.

Troy, N. Y. Wanted.

A BLAST FURNACE FOUNDER. Address. THE BURDEN IRON CO...

Special Notires. For Sale.

in the lower part of Ward township, Hocking County, Ohio, on a branch-of the C. & H. V. R. R. Address, W. D. CARTER, Newark, N. J.

For Sale.

The Industrial Works of Shamokin, owned and successfully carried on for a number of years by the late Wim. Brown, deceased, consisting of Foundry and Machine Shop, and a large stock of Patterns regarded as part of the property. Boiler Shop, Blacksmith Shop and Factory for the manufacture of heavy coal screens. Well located in the borough of Shamokin, Pa., with the best facilities for shipping by rail, and surrounded by a district contributing all the work that a shop of that kind can possibly turn out. The works are now running, but in a very short time possession can be given. Easy terms of payment are offered to suit a purchaser of limited capital.

Offered for sale by M. McILVAIN & SONS, Reading, Pa.

Bolt, Nut and Washer Machinery For Sale.

Six 11/4-in. double-head Bolt Cutters with auto SIX 1M-10. GOUDIE-REAG BOIL CULTERS WITH AUTO-natic stop, and powerfully geared, and particu-arly adapted to cutting Track Bolts or large quan-tities of Bolts of various sizes. Four 34-in. double-head Boit Cutters, the same as re used in all large boit factories. Two 4-spindle and One 6-spindle Nut Tappers. Two No. 2 Washer Machines for making all wash-rate 34 in.

rs to ¾ in. One No. 1 Washer Machine for washers up to 2 1. Bolt Size.

n. Bolt Size.
Two Bolt Headers with latest and best improvements for all boits to 1 in. Strongest heads and largest variety of any machine in use.
One No. 1 Nut Machine for 1½ in. Nuts, hexaon or square.
Two No. 2 Nut Machines for No. 1 Nuts, and all nder. Two No. 3 Nut Machines for ½ in. Nuts, and all maller; 1000 % in. Nuts made per day.

YORK & SMITH

Cleveland, Ohio.

For Sale. Four Large Foot Presses.

Four Tin Manufacturers' Foot Presses, made by Connor, of Brooklyn; three have $17\frac{1}{2}$ 6 in. opening in bed and one 7×7 ; all have his patent adjustable bed plates. They are in first-class order and will be sold at very low prices.

A lot of 16 round combination dies for tops and bottoms, large and small, made for them, will be given gratis with the presses, or sold separately for one-third their value,

We make all styles and sizes of Punching and

fer one-third their value,
We make all styles and sizes of Punching and
Shearing Presses for metal workers—power, foot
or hand,—from \$25 to \$2000. Also, Upright Power
Drill Presses, from \$25 to \$550.
PEERLESS PUNCH AND SHEAR CO.,
115 W. Liberty St., New York.

Cheap Engines, Boilers, Pipe,

FOR SA.

ooo ft. 2-inch Pipe, lap weld, 1000 lbs. presper foot, 12 cts.

ooo ft. 2-inch Pipe, lap weld, 1000 lbs. presper foot, 12 cts.

ooo ft. 2-inch Pipe, lap weld, 1000 lbs. presper foot, 12 cts. sure. per foot, 12 cts, 10,000 ft. 3-inch Steam Fipe. 9 75, cts. 10,000 ft. 3-inch Steam Fipe. 9 3/5 cts. 10,000 ft. 3/4-inch Steam Fipe. 9 2 cts. 10,000 ft. 3/4-inch Flepe, lap weld, 500 ibs. pressure. 9 cts. 10,000 ft. 5/6 Wire Rope, galvanæd. 10 cts. Loesmetive Boller, 50 ffores, 100 tules 10,475 as Mounted Portable Engines, 6 to so horse. 15 Portable and Stationary Boilers, 6 to 50 horse. 15 Portable and Stationary Boilers, 6 to 50 horse. 15 Portable and Stationary Boilers, 6 to 50 horse. 15 Portable and Stationary Boilers, 6 to 50 horse. 15 Portable and Stationary Boilers, 6 to 50 horse. 15 Portable and Stationary Boilers, 6 to 50 horse. 15 Portable and Stationary Boilers, 6 to 50 horse. 15 Portable and Stationary Boilers, 6 to 50 horse. 15 Portable and Stationary Boilers, 10 to 10 horse 10 horse

Send for list.

LOGAN MACHINE WORKS,
Oil City, Pa.

For Sale.

Thirty Tons second-hand at lb. T R. R. Iron used but little and good as new ; a bargain. Address D. S. COOK,

Wrightsville, Pa. For Sale.

One Harris-Corbiss Engine, cylinder 28x48, wrought iron shaft x4 inches at the journal; recently rebuilt and warranted in perfect order; fly-wheel 26 feet diameter, and weighs 70,000 lbs.

For Sale.

SECOND-HAND DROPS AND LIFTERS

BEECHER & PECK, Lock Box 122, New Haven, Conn.

For Sale.

A well selected stock of Hardware in a thriving county seat in Ohio.

Stock all first-class, and in splendid order.

Stock not large but very complete. This is a rare opportunity. For particulars, address, "OHIO,"

Office of The Iron Age, 83 Reade St., New York.

For Sale.

Stock of Hardware and Fixtures of the sulscriber, in the city of Wilmington, Del. Doing a good business. Satisfactory reasons for selling will be given on application FRANK CHANDLER, No. 5 West 4th st.

For Sale.

A Locomotive of standard gauge and in runnin order: Cylinders 131/2 x 22; made at Baldwin

Special Notices.

Second-Hand & New Machinists' Tools. JOB LOT.

One Engine Lathe, 18 in, x 6 ft. J. & L.

One Engine Lathe, 18 in, x 8 ft. J. & L. With turret head is tengine Lathe, 18 in, x 8 ft. J. & L.

One Engine Lathes, 16 in, x 6 ft. J. & L.

Four Engine Lathes, 16 in, x 8 ft. Harrington.

One Engine Lathe, 16 in, x 8 ft. Bridgeport Mch. Iron Works.

One Engine Lathe, 15 ft. x 8 in. P. & W.

One Engine Lathe, 15 ft. x 6 in. P. & W.

One Engine Lathe, 15 ft. x 6 in. P. & W.

One Engine Lathe, 15 in, x 9 ft. Howes & Phillips. A1.

One Engine Lathe, 15 in, x 9 ft. Howes & Phillips. A1.

One Engine Lathe, 15 in, x 5 ft. With turret head.

Two Sensitive Drills. Jon. x 6 ft. With turret head.

Two Sensitive Drills. Prentice.

Three 24 in, Upright Drills. Ames. New. Hos & Jones.

Three 24 in, Upright Drills. Prentice. New.

One Index Milters. Pond.

One 15 in, x 54 ft. Fox Lathe. New. 5q. arbor.

Two Gould Milling Machines.

One No. 3 E. R. Garvin & Co. Hand Miller. New.

One No. 3 Fratt & Whitney Miller. Lincola, Pirty Lincoln Pattern Milling Machines.

One Carl Shaper. Hendey Mch. Co., new.

One 15 in. Shaper. Steptos. New.

One 15 in. Shaper. Hendey Machine Co. New.

One 17 in. Shaper. Gould. Second-hand.

One 17 in. Shaper. Gould. Second-hand.

One 17 in. Shaper. Gould. Second-hand.

One 18 in. Shaper. Gould. Second-hand.

One 19 in. Shaper. Hendey Mchine Co. New.

One 19 in. Shaper. Steptos. New.

One 20 in. x 8 ft. Planer. Harris. Good Order.

One 21 in. Shaper. Steam Hammer.

One Crank Planer, 12 in. stroke. A.

One 6-Spindle Horizontal Drilling Machine.

One 19 in. Shaper. Steam Hammer.

One 19 in. Shaper. Steam Hammer.

One 10 in. S

E. P. BULLARD, 14 Dey St., New York, Akron Iron Co.'s Hot Polished Shafting.

For Sale.

The Little Schuylkill Rolling Mill, at Milldale, Schuylkill County, Pa., near Port Clinton, on the line of the Philadelphia and Reading Railroad, consisting of a Merchant Bar Mill in complete running order, with a splendid water power sufficient to run the mill two-thirds of the year. Engines, Boilers, Foundry and Machine Shop, with Lathe for turning rolls, and all other appurtenances necessary to commence operation at once. Together with dwellings, stables and large tract of land, to be sold low if applied for soon. For further particulars address or apply to J. O. RICHARDSON, No. 232 Dock street, Philadelphia

FOR SALE LOW.—ENGINE.

plete. Cylinder, 24 in. by 48 in. Built by A. J. Sweeney & Son. Can be seen in daily use at our nail factory. LA BELLE IRON WORKS,

Wheeling, West Va. For Sale.

Two Corliss Condensing Beam Engines,

32 in. x 72 in. cylinders. Address, THE HARTFORD ENGINEERING CO., Hartford, Conn.

For Sale.

Stock of Hardware, Fixtures, and Good Will of the subscribers, in the city of Norwich, Conn.

Only one other hardware store. Population

FULLER & PARISH. For Sale.

Hardware Stock and Trade in Michigan. Those wishing to buy a complete stock and fine trade, and in a beautiful place to live, will find a rare chance by addressing

Office of The Iron Age, 83 Reade St., New York.

For Sale.

One co-inch Engine, one to-horse Locomotive Boiler; two large Pulleys, co-inch face; a co-inch Rubber Belt, &c. All in good order, and will be sold for less than value to make room for larger. Can be seen running at

AKRON RUBBER WORKS,

Akron, Ohio.

For Sale.

Hardware Stock and Business. Located in one of the best towns of Northeastern Pennsylvania. Stock clean and well assorted, suited to the requirements of the trade where located. Business of 20 years' standing. For terms and full particulars apply to JAMES S. KUHN, Towanda, Pa.

For Sale.

Ten Double Acting Power Punching Presses, A1 order. Eight Single Acting Power Punching Presses, A1 order. Most of the double acting presses are the No. 3 Waterbury Press; the single acting, No. 2. One large Bliss & Williams Punching Press. One hundred and twenty-seven Foot Presses in A1 order, most of them square slides. Address, THE GEORGE PLACE MACHINERY AGESCY, 121 Chambers and 1e3 Reade sts. N. Y.

For Sale.

Stock of hardware, stoves and implements, and store furniture, in one of the best towns in Kansas HARDWARE.

Box 366, Salina, Kansas, FOR SALE.

Works, Philadelphia.

JOHN H. BRAKELEY,

Eordentown, N. J.

Eordentown, N. J.

WANTED—By a young man of four years' experience in Shelf and Heavy Hardware, a position as cierk, salesman or bookkeepier. Best of reference given. Address,

H. F. T.,

Office of The Iron Age, 83 Reade St., New York.

Special Notices.

ELEY BROTHERS GENUINE BLUE CARTRIDGE CASES.

Twelve Gauge.

The best paper shell in the market. For sai cheap. Supply limited.

ALFRED FIELD & CO., 93 Chambers St., N. Y.

BISSELL & WELLES.

Wholesale Auctioneers,

Special and peremptory sale for the Trade of TABLE CUTLERY, CARVERS, BUTCHER KNIVES, &c.,

On Tuesday, Nov. 1, at 10 o'clock a.m., At 83 Chambers and 65 Reade Sts., N. Y.

This sale will comprise a large line of American This sale will comprise a large line of American Table Cutlery, seconds, destrable patterns; a large assortment of Carvers and Butcher Knives; also a splendid assortment of fine Wairus Carvers and Pearl-handle Tea and Table Knives; also several hundred dozen of Plated Table and Dessert Knives, 8, 12 and 65 os., Plated Tea and Table Spoons and Forks on 18 per cent. nickel silver; also cases of fine Plated Spoons and Forks, all A-1 goods. Also, by order of Messrs. C. Robbins & Son, their entire balance of Pocket Knives and Rasors, comprising about 500 dozen of the manufacture of Messrs. Edward Barnes & Son; also the balance of their stock of Birmingham goods. Also, an invoice of fine English Tea Brays and Card Knives, just landed. The entire sale will be soid without reserve.

Copartnership Dissolution.

NOTICE is hereby given that by the death of the juntor partner, Mr. Nathan Anthony, the firm of BRADFORD & ANTHONY is this day dissolved. The affairs of the firm will be settled by the undersigned, the sole surviving partner.

MARTIN L. BRADFORD.

Boston, June 12, 1881.
All communications in regard to the affairs of the late firm should be addressed to
BRADFORD & ANTHONY, Boston, Mass.

MARTIN L. BRADFORD hereby gives notice that he will continue his business under the name of "BRADFORD & ANTHONY."

The estate of the late Nathan Anthony is to be in no way interested in the future business, whether conducted under the name of Bradford & Anthony or otherwise.

All business communications should be addressed to BRADFORD & ANTHONY 374 W-shington St., Hoston, Importers, Manufacturers' Agents and Dealers in Cutlery, Fishing Tackie, Skates.

See advertisement on page 26.

Scrap.

Buyers of steel and Iron scrap are invited to send address to advertisers, who receive consignments of railway scrap to their order at New York Good opportunity for consumers.

66-23 OFFICE OF THE IRONMONGER,

HEAVY IRON WORKS WANTED. An Eastern Manufacturing Company, doing a profit able business in heavy wrought fron structures, the manufacture and sale of which they control for the United States and Canada, wish to establish additional work, located in the West. South, Pacific Coast and Province of Ontario. Must have first-class freight advantages for receiving rolled structural and merchant iron. Address

WM. O. DOUGLAS, Biaghamton, N. Y.

WM. O. DOUGLAS, Binghamton, N. Y.

A FORTUNE SOUTH.—FOR SALE, in North Alabama, 1000 acros farming, timber and mineral lands, together with Cotton Mill (brick building) now in operation making yarns. Ample room in building for more machinery; new Leftel double turbine wheel; brickware and storebouses; grist and saw mill; cotton gin and press; suitable houses for tensants; location healthy; fine mineral spring; Judge J. R. Paggers and ex-Sheriff Wm Douglas, of Faterson, N. J., have plats; will give any information as to terms, &c., as both know the property and own places adjacent to E.

Notice.

The undersigned firm would be pleased to accept the representation of first-class firms manufactur-ing machinery. Address, J. S. Lizars & CO., Manufacturers of Shilds & Lizars' Feed Water Heater and Purifier, and dealers in New and Sec-ond-hand Machinery, 33 Fifth Avenue, oor. Lake street, Chicago, III.

To Hardware Manufactures.—Would like to represent a first-class concern in Chicago and the West. Am thoroughly posted in Hardware and have an extended acquisitance among the jobbers and No. 1 retailers of above places. Am an excellent salesman, and can work hard. Can furnish unquestioned references as to habits and ability among the trade here. Am hardware had been possible now, but wish to make the control of the control

Partner Wanted.

With \$10,000 to \$15,000 cash capital, in a Mer chant Bar Rolling Mill, "Limited."

Address. Office of The Iron Age, 200 S. 4th St., Phila., Pa.

To Coal and Iron Manufacturers. WANTED,

A situation by a practical manager of rolling mills. Can be well endorsed as understanding the coal and fron manufacture thoroughly in detail. Understande calcining of ores, making coke wish or without kilns; can han le men and material successfully. Highest testimonials and references from last can ployers. Address

Post Office Box 423, Pittsburgh, Pa.

NOTICE.

Superior Machinery, Suitable for Ore Banks, Mines or other Purposes. One 30 H. P. Double Hoisting Reversible Engine.
Castings for double cutter Ore Washer, with gear
ing complete, drums, ily-wheel, pulley, steel wire
rope, &c. Also, two 2x-horse power Engines complete, ready for use. Apply to
WATTS, TWELLS & CO., Limited,
Vesta P. O., Pa.
Or 326 Walnut street, Philadelphia.

HOW TO

KEEP BOILERS CLEAN.

And Other Valuable Information. A book sent free to engineers and steam users by JAMES F! HOTCHKISS,

84 John St., NEW YORK. Sanderson Bros. Steel Co.

Forty shares for sale at a discount. EDWARD FRITH & SON, 241 Pearl street, New York

Trade Report.

Office of THE IRON AGE, WEDNESDAY EVENING Oct. 26, 1881. The growing ease in the money market is the most notable change coming under obmervation in the week's review. The heavy drain of loanable funds, caused by the demands of speculators in the West, has measurably ceased, the rates of exchange on New York at St. Louis and Chicago baving declined from 50 @ 80 cents discount to about par. The easier condition noticed was further enhanced by the announcement, on Thursday evening, that the Treasury was prepared to pay on presentation any of the extended 6 % bonds embraced in the 105th eall, amounting to about \$13,000,000. The gain in the bank reserves, as shown in the weekly statement, had a reassuring effect.

At the Stock Exchange, United States bonds were strong at an advance for the extended 5s, under the impetus of the Secretary's offer to purchase the 6s, as noted above, the rise being in large part due to purchases by the national banks. On Monday the principal dealings were in extended 58, which advanced to 1013 @ 1011/2; the 4s and extended 6s also advanced market was favorably affected by the announcement that Ex-Governor Morgan had been nominated and confirmed as Secretary of the Treasury, under a belief that he would accept the position. The share market started off strong, and the extended 58 advanced to 101 1/8 @ 101 7/8. On Tuesday the news that the Pennsylvania Railroad and the Baltimore and Ohio had each advanced passenger rates, and that the Vanderbilt roads had responded to some extent by advancing rates on East-bound freight. caused a rise in trunk-line shares. Subsequently, when it became known that Governor Morgan declined to accept the proffered position, there was a partial reac-

The elevated railroad agreement was ratifled on Monday by the three Boards of Directors. Dividends to Metropolitan and New York stockholders will begin January 1, but will be paid on only such certificates as have been sent in and stamped under a modified lease.

With the close of the week the market for foreign exchange is dull and rather heavy. The posted rates for prime bankers' sterling are 4.81 1/2 and 4.85 1/2; the actual rates are 4.801/2 @ 4.81 and 4.841/2 @ 4.85, with cable transfers 4.85 1/2 @ 4.86 and prime commercial bills, 4.78 4 @ 4.79 4. In the money market 5 @ 6 % is the quotation for call loans on stecks, and about I & lower on United States bonds. The bottom rate for time loans on stocks is 6 %. Prime mercantile paper is 6 @ 7 %.

The export movement of domestic produce from this port during the past week shows no improvement as compared with the past few weeks. The total is \$6,590,-674, compared with \$8,324,715 for the Mame week last year. In general trade, a good business is in progress, accelerated in some departments by the approaching close of navigation. The prevailing activity is well indicated by the magnitude of the Clearing House exchanges, outside of New York, which were never larger than during the present month.

As above noted, the stock market is generally advanced, compared with one week ago, closing strong and buoyant, with the Vanderbilt stocks special features. The

principal changes are	as follows:	
Advanced-N. Y. C. 1 Louisville and Nash, 154	Wabash Pacific pref. Union Pacific	5
Western Union 179		29 15
Northwestern 34		13
Northwestern pref 3%	Omaha	E
St. Paul 14	Chicago and Alton	3
N. J. Central s Delaware, Lack, and	Missouri Pacific Phila, & Reading	2
Western 3%		ŝ
Delaware & Hudson. 1%	Declined-N.Y., L'ke	-
Central Pacific 1/2	Erie and Western.	5
Ohio Central %		ķ
Lake Erie & West 2	Haunibal & St. Jos 1	1-)4

The importations of specie and bullion at this port during the week ending Oct. 21 were \$1,620,938, consisting of \$1,571,645 in gold and \$49,293 in silver, as against a total of \$6,238,548 for the week ending Oct. 23 last year. The importations since the 1st of January and since the 1st of August compare as follows with the movement during the corresponding periods last year :

18 ⁸ 0. \$42,168,395 4,140,041	Gold\$47,916,572 Silver
\$46,308,436 August 1 1880. \$40,194,028 945-535	Total \$5c,175,848 Since 1881. Gold \$19,992,313 Silver 595-347
\$41,139,563	Total \$19,797,660

The bank return for the week shows a £3. 15/, c. i. f. United States ports. gain of \$4,430,150 in reserve, which now stands at \$1,907,275 above, against \$3,565,- to New York, 11/. 450 above at this time last year. The loans show a loss of 7,038,400.

Government bonds at the close were strong at the following quotations:

Bid.	Asked]
U. S. 41/2 is 1891 registered	113%
U. S. 41/4 's 1891 coupon 112/8	A1 528
U. S. 4's 1907 registered	1161/8 8
U. S. 4'8 1907 Coupon 116	#16% r
U. S. Currency 68 1895	
U. S. Currency 68 1896	4
U. S. Currency 68 1897	- 1
U. S. Currency 68 1898	
U. S. Currency 68 1899 134	- I
Sixes continued	10:1/6
Fives continued	E0156 4

last week :

Specie Legal t'd'rs Tot.reserve Deposits	Oct. 15. \$318,348,900 54,807,300 15,174,500 69,981,700 190,018,300		Dec. Inc. Inc. Inc.	parison. 7,038,400 3,552,200 34,200 3,586,400 3,375,000
Reserve required Surplus Circulation * Deficience	78,504,575 \$2,522,875 19,896,100	71,660,825 1,907.275 19,919,000	Inc.	843,750 4,430,150 22,900

MINING STOCKS.

The following were the closing quotations for mining stocks :

and the same of	Bid.	Aske
American Flag		13
Amie	25	27
Alice		6.00
Alta Mont		1.80
Bodie	6.75	
Bull Dom		80
Big Pittsburgh	85	90
Calaveras	13	
California	75	80
Consolidated Imperial	18	
Consolidated Virginia	2.25	2.35
Chrysolite	6.75	6.87
Cent. Ariz	8.70	1.80
Cherokee	1.20	
Dahlonega	5	6
Dunderberg	60	
Dardanel's.		7.00
Eureka C	6.00	80.75
G. Placer	39	
Granville	3	4
Great Eastern	11	12
Green Mountain		5.00
Hukill	67	70
Horn Silver		17.00
Hibernia	32	33
		2.00
	2.50	
L. Chief	1.00	
	8.50	
Mar. Pref	2.50	3.00
Moose	00.1	
Miner Boy	43	
Nor. Belle	1.00	11.623
N. Bell I		35
Robinson	3.3756	¥3.50
S. Nevada		
Silver Cliff	3-45	
Sutro	1.40	
Spr'g Val	3.55	3.75
St. L. 1 and 4	76	
St. L. 2 and 1	3.70	
Tip Top		6.00
Tuscarora	3	4
Union Con	3.25	
Unadilla	8	

GENERAL HARDWARE

During the week under review no changes in values have transpired; the tone of the market continues firm and the volume of business satisfactory. Foreign Hardware is in fair request at unchanged figures.

The demand for Nails during the week was fair and the tone of the market, as regards price, decidedly strong. We continue to quote 10d. to 60d., \$3.30 @ \$3.40 per keg, net, according to size of order.

Bissell & Welles announce, in an advertise ment on the opposite page, that they will sell at auction at their salesrooms, Nos. 83 Chambers and 65 Reade streets, on Tuesday, November 1st, at 10 a.m., a large line of Table Cutlery, seconds, also Carvers, Butchers' Knives, Pearl-handle Tea and Table Knives, Plated Spoons, Forks, &c. Further particulars will be found in the advertisement referred to. We have received the following circu-

STAMPED WARE MANUFACTURERS' ASSOCIATION OF THE UNITED STATES, 90 Beckman street, New York, October 17, 1881.

At the regular quarterly meeting of this association, held at the Southern Hotel, St. Louis, on the 12th and 13th inst., it was Resolved, That the thanks of the Stamped

Ware Manufacturers' Association are hereby tendered to the jobbers for the spirit in which they have maintained the established prices of the association, and the actuary be instructed to convey to them the expression of our appreciation of their efforts for the common good.

O. W. GRAVES, Actuary

BRITISH IRON MARKET.

[Special Report by Cable to The Iron Age.]

LONDON, Oct. 26, 1881.

Steel Rails.—Prices rule firm under the large demand. Quotations for ordinary sections unchanged, viz. : £6. 5/ @ £6. 10/. Iron Rails. - Transactions have been fair and prices firmer, with quotations unchanged. We quote Welsh, £5. 5/@£5. 10/. Old Ralls .- But little business is doing,

the offerings being light and sales small. Prices are firm. We quote Old Tees, c. i. f. United States ports, £4. 10/. Scrap .- Offerings are moderate and sales

fair. Prices are firmer. Wrought is quoted

Freights.-Steam freights from Glasgow

American Pig.-The deliveries of Pig Iron on old contracts continue on a very heavy scale, but new transactions, except in small lots for early delivery, are not large. The tone of the market is strong, and favorite brands are in short supply. We coninue to quote: Foundry No. 1, \$25 @ \$26;

The following is an analysis of the bank totals of this week compared with that of has been fairly active during the week, and "London, Oct. 8.—Although a large busi-

at about our quotations, 100 tons Carnbroe metal, yet at the early part of the week at about our quotations, 100 tons Carmoroe at \$24.75, 500 tons Summerlee and Coltness at current figures, and several fair-sized lots of Gartsherrie the particulars of which of Gartsherrie the particulars of which of Cartsherrie the particulars of Pig have not transpired. The arrivals of Pig Iron at this port are very large, but more than three-fourths of it is Hematite Pig for than three-fourths of it is Hematite Pig for commerce. We quote: Eglinton, \$23.50 @ have a commerce. We quote: Eginton, \$23.50 (a) life is being given to the market." \$24; Carnbroe, \$24.75; Colthess, \$26.50; Tin Plates.—One of the leading metal sta Glengarnock, \$25; Gartsherrie, \$25 @ \$25.50. Langloan and Summerlee, \$26.

active, and negotiations are pending for a large lot of foreign for earlier delivery than large lot of foreign for earlier delivery than character mile seen apply to difficult. The difficult character is mile seen apply to difficult character in the formation of the character is a seen as a second character in the character is a second character in the character in the character is a second character in the character in the character is a second character in the character in the character is a second character in the character in the character is a second character in the chara domestic mills can supply. It is difficult to name anything like an exact price Charcoal Bright for tinware. duct of the coming year is, to a great extent, already under contract, the figures mentioned may be understood to apply to the last half of 1882; for earlier deliveries, honew would constitute a lessened consumption of Cokes of 150,000 boxes. We have consulted that so far and we continue to quote them \$48 @ \$50,

been reported of 3000 tons Double Heads at \$30 @ \$31; 1000 tons Old Bridge Rails at \$31, and 2000 tons T's at \$28. There is a fair amount of inquiry, and since the abovenamed sales were made the tone of the mar-named sales were made the mar named sales were made the tone of the market has strengthened. Old T's are quoted to-day, \$28.50 @ \$29, and D. H., \$31.50

has been active, and spot lots have nearly all been absorbed. A sale is reported of 200 tons foreign Scrap (a mixed lot) at \$30, from store. We quote Foreign Scrap, \$31, ex store, and for prime selected, from yard, \$32.50 is asked.

Manufactured .- The demand for all descriptions of Manufactured Iron continues active, and we hear of great difficulty being experienced in filling orders on acount of incomplete assortments. Refined Bars from store have been advanced 1-10¢ per lb. during the week, and are now quoted 2.9¢, with the tendency still upward.

METALS.

Copper.—Sales of Lake Superior Copper during the week have not exceeded 150,000 pounds at 18¢ @ 18¼¢, which is the quotation at the close. Consumption continues to make good headway, but manufacturers are sufficiently stocked still, and they are in hopes that by the time they will be compelled to repliciple Copper may again have dropped. to replenish, Copper may again have dropped to a much lower figure. Whether in this they will be disappointed or not cannot be foreseen at present. One thing is certain, and that is that speculation for a rise in Metals, and in Copper and Tin in particular, has been considerably interfered with on the other side by the rising discount, which in its other side by the rising discount, which in its turn receives its impulse upward from the gold drain. This latter is, it appears, not only Westward, but is now also Eastward, for, strange to say, Austria, a country on the silver basis, also draws large amounts of gold from London and Paris, not to speak of Italy, which has done so for some time past, and will continue to do so for a couple of years to come. We thus witness the curious spectaclé of the leading precious metal, gold. years to come. We thus witness the curious spectacle of the leading precious metal, gold, being an indirect check on a further upward movement in the base metals, through the movement in the base metals, through the intervention of the discount availed of to moderate the outflow of gold from Western Europe. In former times a rising discount only meant tight money, now it means for the moment, in that part of the world at do not press soles or Bessemer Pig. - The demand is large that with the vast improvement in statistics and prices are firm. Lots of equal portions of Nos. 1, 2 and 3 are quoted 60/.

Manufactured Iren.—Business has been good during the week and prices are firmer.

Best Staffordshire Bars are quoted £7. 10/dened with their Copper for such a long time past that upon each successive rise. time past that upon each successive rise fresh sellers will doubtless exist, while many holders may even be willing to sell at the hest obtainable rates rather than to hold on any longer, in case any adverse feature shou arise whereby the market might give way. Manufactures are quoted as under: Pit and Hot rolled Flat Bottoms, 29¢ per pound; ('old-rolled Flat Bottoms and Pit Bottoms, with flange cut, 30¢; Praziers, 28¢@ 34¢ as to size and weight; Circles, 31¢@ 34¢. Sheets, 28¢ @ 31¢; Sheathing, 26¢, and Bolt

Tin.—Our market has been rather quiet since our last, brought about by some artiflcial pressure, which, however, is not apt to last. London remains firm at £97. 10/ @ £98, spot, cash, for Straits Tin, with con-£98, spot, cash, for Straits Tin, with continued good deliveries. Singapore is unchanged. At Batavia, 13,000 piculs Billiton were sold on the 25th instant at 66.75 guilders per picul, the parity of which is £100 cost, freight and insurance, or 22½¢ landed here. It is believed that the above Tin was all bought for Europe. As the Straits and Java markets are considerably above parity of our own market, say, equal to 22½¢ here, it is, of course, very probable that shipments thence for October and Notinue to quote: Foundry No. 1, \$25 @ \$26; vember, or still longer, will remain on a very Foundry No. 2 X, \$23; Gray Forge, \$21 @ restricted scale, which in this manner would \$21.50. sales are reported of 300 tons Glengarnock ness continues to be trensacted in this Reedles......

use in the manufacture of Steel Rails, and in their quotations to submit to any manot, as many suppose, the ordinary Irons of terial concessions, and toward the close have again come forward, and renewed tisticians here figures up from tables speci-\$25.50. Langloan and Summerlee, \$26.

Rails.—The inquiry for Steel Rails is the import of Coke Tin Plates into the active, and negotiations are pending for a large late of fermion for the large late of the late of Theorem 1 and consumed for cans, Ternes for roofing, and for Rails, as the time of delivery is an import averages about 3,000,000 boxes of all important factor in the estimate; 1882 sorts, of which Cokes at the above rate delivery is generally quoted about \$60 would therefore represent one-half, or for ordinary sections, but as the prodelivery is generally quoted about \$60 delivery is generally quoted about \$60 for ordinary sections, but as the product of the coming year is, to a great excluded the coming year is, to a great excluded the figures of the coming year is, to a great excluded the figures of the coming year is, to a great excluded the figures of the figures of the figures of the figures of the figure of the figures of the figur Cokes of 150,000 boxes. We have consulted another firm in the line and hear that so far as the trade of this latter house indicates, the demand for Coke thus far shows no such Old Rails, -During the week sales have falling off. It is therefore a debatable quesamed sales were made the tone of the market has strengthened. Old T's are quoted o-day, \$28.50 @ \$29, and D. H., \$31.50 \$5 50; Coke Tin. \$5.20 @ \$5.37½; and ditto Ternes, \$5 6 \$5.12½, all large lines, ordinary brands, per box.

Lead .- Nothing in the way of sales that we hear of has transpired during the week. We consequently quote Common Domestic, nominally, 5¢. St. Louis is as quiet, and We consequently quote Common Domestic, nominally, 5¢. St. Louis is as quiet, and quotes 4¾¢ @ 4¾¢. Large manufacturers here expect some Lead which is delayed, and meanwhile they do not want to pay higher prices for the little offered them. The stock is as light at St. Louis as it is here. Refined is also quiet and nominal. At St. Louis corroding Lead is worth 5¢, which is equal to about \$5.20 here. While Lead is thus in a state of transition, con-Lead is thus in a state of transition, con-sumption of Common Domestic makes as satisfactory headway as could be wished, and the general situation is, therefore, by no means deficient in soundness; it only lacks clasticity on this side for the moment. We lear of no further change in Europe.
London, October 8.—The Lead market is hear of without change, prices being firmly main-tained. There is, however, only a moderate tained. business doing, the market evidently being supported by the limited supplies." We quote manufactures as follows: Sheet Lead, 8¢ per lb.; Lead Pipe, 7 1/2 #; Tin-lined disto, 15#, and Block Tin ditto, 35#, being an advance of 1/2 # on the two first named; all less the sual discount.

Spelter and Zine.—Some sales of Common Domestic Spelter have been effected at New York at 514 . Stocks in the West continue light. Of Silesian there is no stock continue light. Of Silesian there is no stock here; according to last reports received it would cost 55% to import here. We quote Sheet Zinc, 75%. "London, Oct. 8.—Spel-ter steady at £16. 7/6 @ £10. 12/6 for ordinary brands.

Antimony .- Of Cookson's brand there is little here, and that little is all held by one party. In the meantime a fair jobbing party. In the meantime a rair journel trade is transacting. Hallet we hear quoted 131/4 @ 133/4.

OLD METALS, PAPER STOCK, &c. The purchasing prices offered by dealers W D. So.15 @ So.16

The purchasing prices of	ffered by	dealers	Moore's Hone J. P.
are as follows			Moss E. W.
Copper, heavy b	. \$0.85 (\$0.16	Files, casks, 5
Copper Bottoms	. #3 6	.14	Mdse, clos., so
Yellow Metal	.0856	eo. 4	Mount Jos T.
Brass, heavy	.1256	g .m	Paokages, 6
Brass, light	.08%	200.	Myegs F.
Composition, neavy	-14 6	.15	Rach'y, case,
Lead, heavy	.04%	E10.	Newman R & Co.
Tea Lead	.0436 6		Mach'y, caso, 1
Zinc	.03%	3 .039K	Noyes, Smith & Oc.
Pewter, No. 1	.13%	3 .00	Cases, a
Pewter, No. 2		25.00	Oustler W. C.
Light do	19.00	23.00	Mach'y, same, a Squires H. O.
Stove Plate		0 13.00	Gung, 68., 3
Machinery do"	35.00 G	B 15.80	Bhogt & Co.
Grate Bars	6,00 6	7,00	Packages, 4
	on maid b		Schoverling, Daly
The prices current (price			Gales.
dealers) for Rags, &c., are	as follow	8:	muns, 69., so
Canvas, Linen	D. 3560	. 64 0.	Hdw., orate, 1
White Cotton, New	. 10 9360		Schieffelin Wm. H
No. 2	825.0	. 6	Gases, a
White, No. 1	. " 4 6	. O 41/4e.	Struller, Lau & Co.
15 No. 2	. " skc	Ø 2%0.	Caseg, a
Seconds		. @ 1340.	Spill Daniel
Soft Woolens	975 0	0 10 8	Mach'y, es, 18 Mach'y, pos., 5
Mixed Rags	# 4	@ a%e.	Thebaud Bros.
Junny Bagging	1990	6	Mach'y, os., 4
Jute Butts		@ 2 X 8.	Ward Asline,
Kentucky Bagging		0 4 KC.	Clask, 1
Book Stock		G 1/60.	Waefelaer & Duyst
Newspapers	" 120	Ø 1/0.	Iron book nada,
Kentucky Bale Rope		W	Al
remember base stobe			Weibusch, Hüger &
			Ironware, cs., 9

FOREIGN TRADE MOVEMENTS. The following is a summary of the foreign

trade movements for the past week IMPORTS For the week ended October 22:

Since Jan. 1... \$260,729,283 \$399.458,321 \$357.800,585 Included in the imports for the week aded October 21, were articles valued as

ended October	wa,	11 69 6	60.0	DICICIO VILI	CACCO GRO
follows:				Packages.	Value.
A marila					\$2,512
Anvils					
Brass goods					7,890
Bronzes					10,554
Chains and ancho	rs			. 80	3.837
Liocks					38,121
Copper					1.437
Cutlery					41,167
Ping					1.228
Guns				244	38,666
Hardware				. 31	1,334
Iron, pig, tons					818,327
fron, sheet, tons.					6,100
Railroad bars					4,078
Iron ore, tons					5,563
Iron, other, tons				1,585	63,738
Lead, pigs				. 1,183	5,698
Machinery					30, 165
Metal goods				. 347	20,841
Nails				347	-99-91
Nalis					- 113

Wickel				29	3, 36
Old metal					3,786
Platina				8	3,690
Platedware				5	341
Pereussion caps					1.49
Baddery				22	8,59
Steel				15.704	281,541
SHAGLMORE				19	77
rin, boxes				120.06	93,57
IND, 11,478 SELDS.	3, 304, 5	18 lbs			985,905
ware				577	344 58
Zinc			(04,488	4,773

	For the week.	42 weeks of 1881.	Same time 18
Cutlery, pkgs	130	5,697	7.77
Hardware, phys	31	794	1,01
Iron, R. R., bars.	460	322,734	503,6
Lead, pigs	1,183	28,772	48,
Steel, pkgs		899,768	524-40
Tin, boxes	20,951	1,310,500	1,309,07
Tin elabe, lbez	104,518	13 912,038	23,481,20

1879. 1870. 1880. 1881. 1801. 1881. 1879. 1870. 1881. 1881. 1879. 1879. 1879. 1870. 1881. 1879.

For the week ended October 25 :

| Sines San 1 \$270,794,050 \$335,914,907 \$ | 381,599,744 |
|--|--|
| EXPORTS OF SPECIE. | |
| For the week ended October 22 : | |
| Previously reported | \$180,486
8,974,998 |
| Total since January 1, 1881
Same time in 1880
Same time in 1979
Same time in 1878 | \$9,154,794
6,491,834
23,062,389
11,046,850 |

IMPORTS

Of Hardware, Iron, Steel and Metals into the Port of New York, for the Week ending

Oct 25, 1881: Bloom M.

Gases. 2
Boker Hermann & Co.
Arms, on, 20
Cuttery, &m., 20
Cuttery, &m., 20
Boch L. F.
Mach'y, es., 4, 51
Campbell Henry D.
Anvils, 20
Davison Joseph,
Packaces, 34
Degrauw, Aymar & Co.
Chains, 3
Downing, Shehlon & Co.
Gun Caps, es., 3
Arms, on, 2
Ouses, 33
Ounning, Buckley & Co.
Gase, 12
Gartidge on, es., 25
Anvils, og, 20
Chains, oks., 3
Firth Wup, Sons & Co.
Mach'y, os., 7
Folson H. & D.
Arms, cs., 39
Hall, Nicol & Co.
Case, 7
Folson H. & D.
Case, 7
Foraef Cuttery Co. Marvel W. D. Bardsoor: Marvel W. D.
Ore, tons, 390
Mason John W.
Wire rope, codis, a
Millikin & Smith,
Rolls, bdlls, 1178
Naylor & Co.
Colis, wire, 60a
Bars, 1882
Phelps, Dodge & Co.
Piz, tons, 3170
Tillottson L. G. & Og.
Wire, lots, 358
Wire, lots, 358
Whitney A. R. Hall, Nicol & vo.
Case, r
Case, r
Graef Cuth ry Oc.
Cases, a
Hartley, Graham & Co.
Guns, a
Hartley, Graham & Co.
Lronware, oc., 5
Hammacher A & Oc.
Lronware, oc., 29
Hithick A. H.
Visco, 20
Anville, 120
Leesauer & Hondheim,
Case, 1

Anvils, 120
Lessauer & Bondheim,
Case, 1,
Markt & 60.
Case, 8, 16
Mershants' Dispatch Co.
Gases 11
Guns, cs. 23
Marneffe Mr.
Ironware, pkgs., 90
Tools, cale, 1
Merchoy & Bausidem,
Grows chains, &c.,
ekg., 3
Castlige, chs., 3
Mucley, es,, 2
Mooce's Böns, 5, 2
Mooce's Böns, 3, 2
Mooce's Böns, 36 Abbott Jere. & Co. Cases. 6;
Bundles, 19
Baring Bros. & Co.
Steel rods, toms,
Rails, tons, 440
Brown Wm.
Bundles, 45
Packages, 48
Box. 1
Carey & Moon,
Bundles, 313

Blooms, 5751
Duval H. R.
Bands, 248
Gribbon W.
Wire plates, cs., 1
Knoblauch & Lionton
stein,

Mach'y, case, 1 Newman H. & Ob. Mach'y, case, 1 Noyes, Smith & Ob. Cases, 2 Nuster W. C. Mach'y, sase, 1 Quires H. O. Guns, 08, 3 hogt & Ob. Packages, 4 choverling. Daiy Gales, Guns, 68, 10 hdw., orate, and other ham. H. Gases, a truller, Lau & Co. truller, Lau & Co.
Cases, 2
pill Danjel,
Mach'y, 08,, 18
Mach'y, pos., 5
hebaud Bros.
Mach'y, 08,, 4
ard Asline,
Elask, 1
refeher & Duysters,
Iron hook nais, eks.,

usch, Hilger & Co. Ironware, cs., 9 Cuslery and hdw., 43 Witte John G. & Bro. Cutlery, cases, 8 Order, Files, cks., 16 Anvils, 199 Iron

Anglo-Am. B. Co. Anglo-Am. B. Co.
Roofing, es., 80
Baring, Bros. & Co.
Wire rods, cofts, 655
Brown Br. s. & Co.
Barn, 4655
Wire rods, bolls., 6354
Bundles, a28
Wire, colls, \$a2
Bruce & Cook,
Bheej, bdls., 700
Coddingen T. B. & Co. Bruce & Cook,
Bheel, bdls, 700
Condington T. B. & Co.
Sheet, bdls. 598
Boxes, 43
Orocker Bros.
Fig. tons, 346
Billott Sous & Oo,
Ore, tons, 515
Feld C, de P.
Lig, tor s, toe
Hirustein W. L.
Pig. tons, 500

Pig, tons, 300 Irwin R. & Co. Irwin K. & Co.
Pig, tona, 65e
Ladd R. & H.
Roofing, cs., 103
Lee, James & Co.
Pig, tone, 2co
Lundberg Gue.
Bars, 234,
Bundles, 530

Wire, lots, 258
Whitney A. R.
T and angle, bxs.,648
Williamson J. & Co.
Pig, tons, 200

Pig, tom, sos der, Pig, toms, se68 Ore, toms, se7-3 Ore, lots, 2 Ore oxides, cks., se Heavy wr'ght sorap, toms, 210 Spiegel, toms, 1800 Spiegel, kilws, 494, 500 Tirest, 10 Spiegel, KHOS., 434, 500 Tires, 10 Rods. bdls., 564 Coils, 1525 Rods, pkgs., 4767 Rough castings, oe., Bars, 10,702
Bars, 10,702
Bundles, 1101
Mag. 1701, cks., 100
Oxide, cks., 61
Wire rods, bdis., 161s
Old iron, tons.

old iron, tons, 43
Old rails, tons, 43
Old rails, tons, 800
Rails, 352
Sheet iron, bdls., 100
Scrap, tons, 200
Rail ends, tons, 200

Bundles, 313 Drexel, Morgan & Go. Blooms

stein, Slow Stein, Blooms, 512
Morton, Bliss & Oo.
Blooms, 864
Moss F. W.
Bundles, 205
Bars, 56
Cases, 2
Files, cks., 3
Peter Bros.
Steelware, 08., 5
Winter & Smille,
The Ingous, 614
Order,
Blooms, 10,965
Rails, 1095
Old railway

Olo railway leaf,
Rilos, 80,372
Bands, 66
Ends, 9
Bundles, 94
Steel strips, clas, 29
Plates, 594
Angeles, 375
Forgings, 28
Cases, 25
Lear tin, cases, 50
Berge P Schuize,
Zinc dust, cks., 6
Barns & Co.
Tin slabs, 932
Claude A. P.
Tin plates, cs., 6
Coldengton T. B. & Co.
Tin plates, bxs., 126
Drexel, Morgan & Co.
Spelt et ingols, 1736
Franklin E. M.
Cop, er nickel, os., 4
Hall Win.
Tin slabs, 646
Katz Bros.
Tin slabs, 647
Kichen C. & Co.
Tin plates, bxs., 24
Mever G. A. & E.
Zinc oxide, bbls., 60
Noel A.
Tin plates, cs., 9
Phelps Dodga & Co.
Tin plates, bxs., 440
Tin plates, cs., 9
Phelps Dodga & Co.
Tin plates, bxs., 410
Tin plates, cs., 9
Phelps Dodga & Co.
Tin plates, bxs., 410
Tin plates, cs., 5
Stelner, Kaln & Co.
Zinc, pkge., 1
U. S. stamping Co.
Tin plates, bxs., 111
Wilson Sens,
Zinc pkgs., 9
Windmulber L. & Roelker
Zinc, cks., 23

Order, Tip plate, bxs.,17,504 Composition tubes, Lead, pigs, 1456 Spelter, ingots, 6146 Tin slabs, 2013 Tern pits., bxs., 200

EXPORTS

Of Hardware, Iron, Machinery, Metals, &c., from the Port of New York, for the two Weeks ending Oct. 25, 1881:

Ptlm., gais .. 13,520 \$2,0

Havre.

Naph.,gals.353,864 Iron drums... 100 Mf. iron, pkgs 40 Mach'y, cs.... 5

Ag. imp , pkgs 50 Clocks, bxs...

| Dutch | West | In | dies. |
|---|--------------------------|---------------------|--|
| Nails, b
Ptlm., g
Hdw., es
Clocks, | als | 10
840
5
3 | Val.
\$127
104
61
68 |
| Dutch | East | In | lies. |
| Ptlm . g | als. 600, | 860 | 71,940 |
| H | ambu | rg. | |
| Hdw., c
Sew. ma
Pumps,
Ptlm., g
Clocks, l
Britware
Mf. iron | pkgs.
als.968,
oxs | 18 | 4.179
22.576
1,460
71,150
1,554
75
245 |
| Charle an oran | E.zeO. | - | E -0 -0 |

Ouba Hdw., cs. . . . 109
Mfd.iron, pkgs 649
Rivets, kegs. . 9
Tinfoil, cs. . 20
Ag. imp., pkgs 16
Sew. ma., cs. . 31 Bremen. Porto Rico. Ptlm., gals..23,304

Antwerp. Ptim. gals 561,600 45. Ag. imp., pkgs Mfd.iron,pkgs I. rolls, cs.... Sew. ma., cs... Hdw., cs.... Mach'y, pkgs. Nails, bxs... Pumps, pkgs. Hdw., cs... Sew. ma., cs.. Central America. Rotterdam. iron, pkgs 141 1,535 Hdw., pkgs... 54 Cartridges, cs. 3 Clocks. lery, cs... 3 iron, pkgs 105 ls, kegs... 59 W. mills, pgs. Mach'y, cs.... Copenhagen. ristols, cs...

Copenhagen
Mach'y, pkgs. 15 1,062
Pumpe, pkgs. 2 100
Ag, imp., pkge 1 660
Clocks, bxs. 27 534
Mf, iron, pkgs 38 1,443
Compasees, cs 2 110 Iron, pkgs... 50 Shot, bags... 20 Pumps, pkgs. 2 Clocks, bxs... 6 Sew. ma., cs... 17 Mersey. Ptlm., gals.450,000 40,00 Liverpool. United States of Co-

lec. ap., pgs. 25 locks, pkgs. 247 etal gds., cs. 1 lombia. Mf. iron, pkgs 325 Ptlm., gals...5042 Mf. fron, pkgs
Ptlm., gals...5
Sew. ma., cs...
Cutlery, pkgs...
Cutlery, pkgs...
Cartridges, cs
L. r. g'ds, pgs..
Mf. copper, cs
H'rse sh's, kgs
Solder, bys. Sew. ma., cs.. 73 Ag. imp.,pkgs 20 Ptlm., gals.316,501 25,322 Mf. copper, cs H'rse sh's, kgs Solder, bxs... Shot, kegs... Carbines, cs.. Newcastle. Hdw., cs.... Exmouth. 32 44,491 Ptim., gals. 136,673 10,628 London. Ptlm., gals.293,900 24. Guns, cs..... Hdw., cs..... Mach'y, pkgs. Skates, cs.... Clocks, pkgs... 5,311 Clocks, pkgs. 64 t, Ag. imp., pkgs 33 l, Pumps, pkgs. 15 Tin plate, bxs. Cot. gins, bxs. Rifles, cs.... Bristol.

Hdw., cs.... 3 40 Clocks, bxs... 89 2,348 Mach'y, cs... 2 50 French West Indies Clocks, bxs... Sew. ma., cs... Hdw., cs.... Ptim., gals...950 Hull. Hdw., cs..... 17 534 Clocks, bxs... 112 1,682 Mach'y, pkgs. 295 12,214 Mach'y, cs... 12 980 Ag. imp.,pkgs 8 518 Mf. iron, pkgs 20 275 Hayti. Ptim., gals. 11,140 Nails, kegs... 60 Lead, pigs... 13 Still 1 Tralee, Ptlm., gals. 101,138 8,088 iron, pkgs 480 British Australia. Tanks..... 14 Mach'y, pkgs. 182 Boiler 1 Hdw., cs..... z Sew. ma., cs.. z Glasgow. Arms, cs..... Y. metal, cse. Lisbon.

Hdw., cs..... 8 Muskets, cs... 8 Clocks, bxs... 86 China. Bravs gds , cs. 11 Ag. imp., pge Alexandria. Dunkirk. Ptim., gals. 288,760 32,174 Ptlm., gals.403,872 29,16 Africa. Gibraltar. Ptim., gals. ro,que Ptlm., gals.60,000 6,925 Clocks, bxs... 4 85 Hdw., cs..... 2 63 Cutlery, cs...
Nails, kegs...
Iron safes...
L'mp gds..pgs
Lances, case British North Amertean Colontes. Ptg.mtl, pkgs Mf. iron, pkgs Guns, cs..... Pig iron, tons. 120 1,680 Mfd. iron, cse. 1 8 Ptlm., gals...1650 250 Mexico. Marseilles. gals...7850 Ag. imp., pkgs 5 475 Clocks, bxs .. 2.4

Guns, cse.... Hdw., cs.... Mfd. iron,pkgs Cartridges, cs. Alicante. Ptlm., gals. 390,470 42.94 Cartridges, cs. 11 Ag.imp., pkge 1 Santander. Ptlm., gals.218,460 24,0 Genoa.
Ptim., gals. 137,862 10,024
Mf. iron, pkgs 2 62 Genoa. Barcelona. Ptlm., gals. 154.000 14.02 British West Indies. Constantinople. Ptlm., gals., 26,136 3,131 Nails, pkgs., 243 8c9 Sew. ma., c8, 5 130 Clocks, box., 1 15 Mf. fron, pkgs. 16 20, they, cs., 12 144 Hdw., pkgs., 2 33 Y. met., pkge., 1 40 Cartridges, cs., 1 24 g. mp., pkge., 1 42 Cartridges, cs., 1 24 g. mp., pkge., 1 12 Ptlm., gals 190,700 21,930 Syria. Ptlm., gals.111,800 13,000 Smyrna. Ptlm., gals.248,650 30,809 Mf. iron, pkgs 120 1,103 Ag. imp.,pkge Mf. Iron, page 120 Clocks, cse... 1 Hdw. pkgs... 35 Ag. imp., pkgs... 36 Cutlery, cs... 2 Mach'y, pkgs... 27 Pumps, pkge... 1 British Guiana. Ptlm., gals...5100 Hdw., cs.... 24 Peramb'rs. cs. 2 Sew. ma., cs... 2

Needles, cs. 1
Mach'y, pags, 1
Mf. iron, pags 304
Zinc, case . 1
Shot, bags . 2
Ag, imp, pags 3
Cutlery, cs. 14
Hdw., cs. . 40
Sew. ma, cse. 1

Feneruela.

Ptlm., gals...7387 Needles, cs... 1

New Zealand.

W. mills, pkgs Ag. imp., pkgs; Mf. iron, pkgs I. r goods, es. Nails, es. Peramb'rs, es. Pumps, pkgs Hdw., pkgs.

allowance are plenty-many having held off to take advantage of a possible decline in prices—and cars are not available to meet demands with promptness. Both in the Anthracite and Bituminous trade some concern begins to be felt lest the requisite supplies fail to come to hand in due time. fail to come to hand in due time. We are assured, however, by one of our largest local agencies that there is no cause for alarm. It is not believed that the embarrassment now experienced will continue. "Probably by the middle of December, or

ay within six weeks," said our informant, Coal will be in excess of demand." Prices of Anthragite are maintained, but there is of Anthrapite are maintained, but there is no upward tendency. Quotations are unchanged. Wyoming Coals, \$3.90 @ \$4 for Lump and Grate; \$4.05 @ \$4.20 for Egg and Stove; Chestnut, \$3.90 @ \$4.10. Lehigh, \$4.40 @ \$5.25 for Lump; \$4 25 @ \$4.45 for Stove, Egg and Grate; Chestnut, \$4. In Bituminous Coals there is correspond-

ing activity, caused in part by the number of foreign steamers which have arrived in port almost simultaneously; but supplies would be sufficient for all demands if cars could be had. The shipments of Bituminous Coal are now made chiefly from Baltimore rather than Georgetown, on account of lack of water in the Chesapeake and Ohio Canal. Cumberland is quoted \$3.50 at Baltimore and \$4.75 at New York. Freights are unchanged.

At a well-attended meeting of the Coal trade, held at No. 111 Broadway on Monday, the following committee, to draft a constitution and set of by-laws for a permanent association, was appointed: F. A. Potts, Richmond Talbot, R. S. Hill, F. Robinson and H. S. Ward. The objects of the association are to advance the interests of the trade and to protect it from abuses.

It is noticed that there is an increasing tendency to substitute steam boilers for water power, giving promise of a larger demand for Coal next year for industrial purposes than ever before. Even in such places as Lowell and Lawrence boilers are being introduced to supplement water. The total tonnage of Anthracite Coal from

al! the regions for the week ending Octo-ber 15, as reported by the several carrying ber 15, as reported by the several carrying companies, amounted to 652,054 tons, against 699,018 tons in the corresponding week last year, a decrease of 46,934 tons. The quantity of Bituminous Coal sent to market for the week amounted to 99,376 tons, against 80,200 tons in corresponding week last year. The total tonnage of all kinds of Coal for the week is 751,460 tons, against 779,218 tons in corresponding week last year, a decrease of 27,758 tons, and the total tonnage for the Coal year is 25,761,152 tons, against 21,273. Coal year is 25,761,152 tons, against 21,273, 317 tons to same date last year, an incre of 4,487,835 tons.

PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St., i

Pig Iron.-The market shows increasing strength, and although there has been no change in prices, transactions have been larger, and at inside figures furnacemen decline further orders. This applies to all descriptions, but is probably most marked in Mill Irons. A considerable number of 1000ton lots Gray Forge were picked up during the week at about \$20 at furnace, but it would be hard to find any to-day at less than \$20.50, while many quote \$21, firm. This is not due to immediate scarcity, but is intended, rather, to deter parties from foreing orders for future delivery. All the leading concerns have Iron enough bought to see them to the close of 1831, but as large contracts for finished Iron have been closed for spring delivery, manufacturers are anxious to secure raw material to cover. Furnace-men are trying to keep prices down, but when they see advances of from a tenth to a quarter of a cent per pound, and more obtained for all kinds of finished Iron, they naturally wish kinds of finished Iron, they naturally wish to participate in the advance to some extent, especially when orders are thrust on them for delivery in the distant future. It is by no means certain that consumers would have to pay higher prices by deferring purchases until material was actually required, but having closed one side of the contract they want also to make the other side equally sure. Taking this view of the mar-ket, it is hard to see how prices can be kept down. Many very large concerns have engagements for all the work they can turn out within the next six months, and if they undertake to cover everything it will involve purchases which can scarcely fail to affect prices. Some of the furnaces have met the amounts for 1882, but it is hardly likely that they will continue taking orders at old prices while their neighbors are getting a dollar or two per ton more for their iron. This in fact has already occurred, those who would quoto \$20 at furnace have no iron for sale; others hold for \$21 to \$21.50. Foundry Irons are steady and firm, but have not leave twill for \$40.50 for foreign Rails, and about \$1.50 for the prices are also favorable to sellers, and deliveries before April or May hard to obtain. There are several offers out for 35's for shipment to Gulf ports, but it will be difficult to get them as early as desired. Prices may be quoted \$61 @ \$63 for foreign Rails, and about \$1.50 foreign Rails, and ab dry Irons are steady and firm, but have not been called for with much urgency, prices having been high, in proportion, for many months past. A few brands are quoted \$25, but anything favorably known is usually held at \$25.50 to \$26, and for one or two special favorites \$26.50 to \$27 is asked. As we have indicated, the immediate outlook favors something of an advance in prices, but much will depend upon the character of the advices from abroad. During the past Ptlm., gals. 173,210 19.553 day or two rumors of a slight reaction are affoat, and if there should be any pressure to effect sales in the United States markets. it will doubtless give a sudden check to any advancing tendency. At present prices there is not much to be feared from foreign competition, but at a dollar or two advance it would be quite another matter. The position is therefore too uncertain to warrant very confident predictions, but in the meantime everything appears to be safe, and prices perfectly satisfactory to all who are interested in domestic manufactures.

Foreign Iron.-Business has been very quiet and only a few small lots have changed hands, so far as we can learn. No. 3 Mid-dlesboro' is held nominally at about \$20.50, sales at \$20, although a lot of No. It was sold at \$20.25 less than a week ago. There is no regular market for this class of Iron at Lack of transportation is the general complaint in the Coal trade—not that the volume of business is in any respect extraordinary for this season of the year, but orders from those who have been on short ders from those who have been on short that the prices are low, and as it cannot be replaced within \$2 per ton of what buyers offer, business is gradually dying out. Scotch Iron is bringing better prices, but only retail lots

All that a present; consumers will only take it when prices are low, and as it cannot be replaced within \$2 per ton of what buyers offer, business from those who have been on short

are taken at \$25 @ \$26, according to brand. Glengarnock sold at \$25, Gartsherrie and Coltness, \$25.50 @ \$26. Bessemer has been inquired for, but it has not resulted in much business. A 2000 ton lot, for early ship-ment, sold at a fraction over \$25, but buyers are very cautious and apparently not read to take hold at rates recently quoted. There is more pressure to sell from the other side, and there is little doubt that liberal conce sions from asking prices could be obtained if offers were made by cash buyers. At the moment the disposition among buyers is to wait for further developments; hence we quote the market nominal at \$25 @ \$25.50 cording to date of shipment.

Blooms.—The market is steady and unhanged at last week's prices, say: Charoal Blooms, \$72.50; Run-out Anthracoal Blooms, \$72.50; Run-out Anthra cite, \$60 @ \$62.50; \$52.50 for Scrap Blooms and \$47.50 for Northern Ore Blooms.

Muck Bar .- Inquiries have been made for large lots, but for early delivery the mills appear to be sold up to December. Prices are nominally \$45 @ \$46, but we have ot heard of any actual sales within the pas week or ten days.

Shaped Iron.-The mills are more crowded than ever, and instead of gaining on their orders they are falling behind. The result is that a sharp advance in prices is asked on all lots which are to be delivered before January or February. Several of the leading mills are increasing their capacity, but will not be in a position to avail themselves of it before spring. Hence, orders can be placed at combination rates for spring delivery, say 3¢ for Angles, 3.7¢ for Beams, 3.9¢ for Channels and Tees. Earlier deliveries are quoted at 3.25¢ for Angles, 4¢ for Beams, and 4.25¢ for Channels and Tees. Bridge Plates, 3.5ϕ ; Hammered Axles, 3.75ϕ Rolled Axles, 3.4ϕ .

Bar Iron .- Business continues active, and rices are again a shade higher. Store price has been advanced to 2.9¢, and a good deal of business has been entered at that figure when prompt delivery can be guaranteed, although 2.7¢ is the mill price. The scarcity still continues, although not quite so marked as it was some time ago. Mention was made last week of sales made by a Pitts-burgh firm which, we understand, amount about 700 tons in all. This for the time eing was quite a relief to the market, but there is no reason to think that the purchases could be duplicated. The city and near-by mills are generally about as full of orders as they care to be, and unless for small lots it is difficult to get anything taken for delivery before December or January. Prices range before December of January. Frices range from 2.7¢ @ 2.9¢, market firm. Skelp Iron is quoted 3.0¢ @ 3.1¢, and difficult to get in quantity. Negotiations are in progress to import several lots, and it is not improbable that something will be done in that way.

Plate and Tank Iron.-There is very little to be said under this heading, as nearly all the mills are working on old contracts. There are plenty of orders waiting acceptance, but parties are unwilling to buy largely at the high rates quoted, so that business is something of a retail character. Prospects are entirely satisfactory to manufacturers, however, and prices are firm as last quoted, : Tank Iron, 3.50¢; Refined, 4¢; Shell, ¢; Flange, 5¢ @ 5.50¢; and Fire-box, @ 6.500.

Wrought Iron Pipe,-There is a heavy demand for all descriptions, and prices are firm at 40 % discount on Boiler Tubes, and 55 571/2 % on Gas and Steam Pipe.

Sheet Iron.—There is no change to eport, neither is there likely to be for some time to come. Manufacturers are crowded with orders which will fully employ them during the balance of the year, so that consions in price are entirely out of the ques-We quote same as last week :

cion. We quote same as las:

common Sheet, No. 27 and 28...

common Sheet, No. 26...

common Sheet, No. 16 to 21...

Best Refined ½4 @ ½4 advance

sest Bloom Sheets, No. 22 to 25.

sest Bloom Sheets, No. 22 to 25.

sest Bloom Sheets, No. 22 to 25.

sest Bloom Sheets, No. 16 to 21.

common Red Plates, 3-16 to 16.

stue Annealed, 3-16 to 16...

sest Bloom Galvanized, discountered quality, discount. 43/40 ce on the abov i, discount. ..40 %

Steel Rails.-There is more inquiry and more disposition to place orders as early as possible. Sales during the week amount to about 8000 tons for 1881 delivery, at prices ranging from \$61 to \$63 at mill, a 4000-ton lot of 60's having been taken at the lower figure; smaller lots at \$62 @ \$63. For the first half of 1882 it is difficult to get an oramounts for 1882, but it is hardly likely that said to be an inside for mean to be said to be an inside for mean the said to be a sai ss at mill for American, according to date of delivery. Market firm.

Steel Blooms .- Business is rather quiet steel Blooms.—Business is rather quet in this department, partly because many of the mills are fairly supplied, and partly be-cause of the upward tendency of prices. At rates recently paid there is very little mar-gin for rolling, and if Rails do not advance, Blooms must decline, or that branch of business be given up. We hear of \$46, duty business be given up. We hear of \$46, duty paid, being asked to-day for prompt ship ments, while sales have been made at very near that figure. Freights are a lagainst shippers, and manufacturers Freights are a little old so close up that they cannot quote for earlier than January; hence, business for the time being is very much restricted.

Iron Rails.-There has not been as much isiness closed as was expected, which is due partly to the extreme firmness manifested by sellers. Lots of a few hundred cons each have been taken at \$47.50 at mill for 56's, and this appears to be a figure, with \$48 asked. Heavier co figure, with \$48 asked. Heavier are expected soon, and prices are likely to be fully maintained. Light Rails are quoted be fully maintained to weight. \$50 @ \$52, according to weight. Foreign, \$45.50 @ \$46 for 56's, and about \$47.50 for

Railway Fastenings .- The demand is

Old Rails. - The market continues firm, this state of affairs continues no improve and buyers would find the market 25¢ @ 500 against them as compared with last week Business is very limited, however, and it is Business is very limited, however, and it is exceedingly difficult to find buyers for large lots at prices asked. For shipment, \$28.50 is asked for Tees, and about \$31 for Doubles. Lots from store may be quoted \$28 and \$31 respectively, a 200-ton lot of Doubles having been taken at \$31 in store, and for shipment \$21 to bid \$31.50 bid.

Crop Ends-Are offered at \$26 for shipment, a 500 ton lot affoat having been taken at a higher price, said to be \$26.50 ex ship. Old Steel Rails nominal at \$26 @ \$27.

Old Car Wheels-Are held at \$30 for best makes; buyers offer about \$1 less money. Old Axles nominal at \$37 @ \$38.

Scrap Iron-Is steady and scarce at \$20 \$ \$30 for Medium, and \$31 @ \$32 for choice Vrought, and about \$20 for Cast.

Nails—Unchanged, stocks light and prices firm at \$3.40, less the usual trade discount.

PITTSBURGH

Office of The Iron Age, 77 Fourth Avenue, PITTSBURGH, PA., Oct. 25, 1881.

Pig Iron.-We have to report a continued strong and fairly active market, and while there has been no change in prices as compared with the date of our last report, the feeling on the part of furnacemen is one of continued confidence, and all good quali ties offered meet with ready sale at full prices. While it is well known that mill owners generally have been buying pretty freely for some time past, and have fair stocks in yard and to arrive, yet they are nearly all willing to buy any good lots that are offered at ruling prices, from which it is evident that they do not expect a reaction, but that, on the other hand, they are apprehensive of still higher prices. The railroad blockade is affecting the furnacemen as well as the mill owners; it is difficult to obtain supplies of ore, Coke, &c., and some furnaces, it is stated, unless the blockade is raised, will soon be obliged to blow out for want of supplies of Coke. Neutral Mill Irons from native ores may now be quoted at \$23.50, 4 mos.; last sales were at this figure, but some of the furnaces are now asking \$24; ditto from Lake ores, \$24 @ \$24.50, the latter for that inclined to Redshort Foundry grades; \$24, 4 mos., for No. 2, and \$25 for No. 1

Bessemer Iron.-No sales reported the past week, but the market is firm, with considerable inquiry and but little offering. No. I is still quoted at \$28 @ \$29. Some dealers predict that No. I will go to \$30 before the close of the year.

Muck Bar-Continues in scant supply and with no apparent abatement in the demand and but little offering. Prices are still tending upward. Sales are reported at \$43 @ \$44, cash—an advance of fully \$1 per ton. Since the advent of cooler weather the production has been largely increased, but so has the consumption, as the mills gener-ally are using all they can make.

Manufactured Iron .- While possibly the demand is not as urgent as it was a few weeks ago, it is owing mainly to the fact that buyers generally have realized that it is almost impossible to have an order of any magnitude placed for near-by delivery, as our mills are, almost without exception, sold up until the close of the year. There are plenty of buyers for immediate delivery and but few sellers. Manufacturers are loth to turn away orders, but, as a rule, they are refusing to bind themselves in regard to time delivery. In a word, the best they are willing to do is to book orders and to do the best they can in regard to delivery, with the distinct understanding that they are to have market rates, whatever they may be whenever the goods are shipped. We repeat former quotations, full card: Merchant Bars, 2.50¢; Sheet, 4.30¢ for No. 24; Tank, 3.30¢; Hoop Iron, 3¢@ 3.20¢; Skelp Iron, for which it is almost impossible to place an order at any price, is quoted at 3¢.

Nails.—The activity noted for some time past continues; usually the rush subsides the latter part of this month, but if the weather is at all favorable there will be a heavy consumption during the balance of the year ar all winter, for that matter. Prices remain unchanged on a basis of \$3.25 for rod, with usual abatement and discount.

Wrought Iron Pipe .- There appears to be no abatement in the demand, and one of the largest mills in the country is virtually he market for the remainder of the out of Discounts have been reduced to 55 @ 57½ % on Gas and Steam, which of course is an advance. Boiler Tubes remain unis an advance. Boiler Tubes remain unchanged at 40 % off. Oil Well Casing has been advanced to 85¢ per foot, net, and do. Tubing to 25¢. There appears to be considerable activity in Oil Well supplies; a good many new wells are being put down, otwithstanding the unremunerative price of the article.

Rails, &c .- Steel Rails are still quoted at \$62.50 @ \$63, cash, as well for November as December delivery, and \$60 and upward for 1882. Railway Spikes are firm, but unchanged at 3¢, 30 days; Splice Bars higher, 2.60¢ @ 2.65¢, as are also Track Bolts, 3.75¢ @ 4¢. Mills making a specialty of these articles are assured of an active trade all winter.

Steel .- Manufacturers continue to report Steel.—Manufacturers continue to report business as being quite active. The mills are all employed, and prices are firm, but unchanged. It is worthy of mention that, notwithstanding the material advance in finished Iron, there has been very little change in the prices of Steel this year. We quote: Best brands of Refined Cast Steel, 11¢; Crucible Machinery, 5½¢; Bessemer and Open hearth Machinery, 5¢; ditto Spring, 4¢@ 4½¢; ditto Plow, 4¼¢@ 4½¢.

Scrap .- Wrought Scrap is still quoted at 128 @ \$29 per net ton for ordinary, and \$30 2 \$31 for selected Railroad. Cast Borings ld during the week at \$16 per gross ton Wrought Turnings, \$21 @ \$22 per net ton. Crop Ends are still quoted at \$29 @ \$30, gross, and Old Car Wheels, in the absence of sales, may be quoted at \$28 @ \$30, gross; Old Car Axles and Car Springs, \$36 @ \$38 per net ton.

Coke .- Owing to the railway blockade,

ment need be looked for. There is no abatement in the demand; indeed, it is more urgent than ever, and it is stated that some Pig Iron furnaces will soon be obliged to blow out for want of Coke. For the time being the railroads, it is understood, are refusing to receive any except for local points, and this important interest is in a most unsatisfactory condition. There would be a demand for all that could be produced if only transportation could be obtained, but as it now is producers will either have to pile up or curtail their production, simply because they cannot get cars. A resumption of river navigation would be of great advantage to this interest. We continue to quote at \$1.60 per ton, free on cars at ovens, and \$1.75 for small lots.

Window Glass .- Manufacturers gener ally report business as being quite active, some of them are sold up for the rest of the year, and prices are steady; so far as we can learn the regular rates established by the Western Association are being adhered to. Discounts on carload lots, 60 and 10 and 5 % on single, and 70 % on double strength, 60 days, 2 % off for cash.

CHICAGO.

Office of *The Iron Age*, 36 and 38 Clark Street, cor. Lake Street, CHICAGO, Oct. 24, 1881.

Pig Iron.-The situation of Pig Iron in this market remains unchanged since our The demand is good and the firm. We learn of a sale of last writing. The demand is good and the market very firm. We learn of a sale of 500 tons Calumet having been made during the week at \$27 @ \$28, an advance of 50¢ over our last quotations. Crane Iron is in active demand at \$29 for No. 1 and \$28 for No. 2. Thomas is quoted nominally at \$28.50 @ \$30; Scotch Imported, very firm at \$29 @ \$30; American Scotch, \$25.50 @ \$28.50; Silvery Soft, \$24 @ \$26. Quotations on Lake Superior Charcoal Irons are as follows: Nos. I and 2, \$31; No. 3, \$32; Nos. 4, 5 and 6, \$33 @ \$34.

Manufactured Iron.-Dealers in Merchant from are still subject to the annoyance caused by the ill-assortment of stocks and scarcity of supply, while the demand continues very active and the market firm at the following quotations: Bar, 3¢; Angle, 3.80¢; T, 4¢; Hoop at 3.80¢ rates; Sheet, Plate following quotations: Dar, 39; Angu, 3.00; T, 4¢; Hoop at 3.80¢ rates; Sheet, Plate and Tank, 10 to 14 gauge, 4¢; 15 to 17 ditto, 4.30¢; 18 to 21 ditto, 4.60¢; 22 to 24 ditto, 4.80¢; 25 and 26 ditto, 5.20¢. Patent Cold-Rolled Shafting, dis. 20%; Norway Iron, Original Bars, 4¾¢ rates; Norway Iron, re-rolled, 5¾¢ rates; Ulster Iron, 4½¢ rates; Low Moor Iron, 8¢ rates; Nuts and Washers, 7¼¢ off list; Wrought Boat Spikes, 4¢ rates. Wrought Boat Spikes, 4¢ rates

Nails.-The demand for Nails continues to be as active as ever, while stocks grow lighter every day. The ruling rates for 10d to 6od is \$3.30 @ \$3.40, according to quantity, although some dealers, we learn, are asking and obtaining \$3.50.

asking and obtaining \$3.50.

Steel.—We quote: Tool, II½¢; Machinery, O. H., $5\frac{1}{2}$ ¢; Crucible Machinery, 7¢; Hammer, 2 inches and under, 8¢; over 2 inches, 9¢; Cast Spring, $6\frac{1}{2}$ ¢; and O. H. Spring, Tire and Sleigh Shoe, 5¢. The quotations on this latter class of Steel would be shaded a trifle on large lets. Shorts shaded a trifle on large lots. Sheet, first, sec snaded a trine on large lots. Sheet, first, second and third quality, 12¢, 10½¢ and 5½¢, respectively; Crucible Plow, 6¢ @ 6½¢; Eagle Plow, 5½¢; Iron Center Plow, 10¼¢; and soft Steel Center Plow, 10¾¢.

Scrap Iron.-Scrap Iron is moderately active, while prices continue unchanged. We quote: No. I Wrought, \$21.50; No. I Forge, \$24; Heavy Cast, \$18, and Stove Plate, \$13.

CHATTANOOGA.

Office of The Iron Age. Market and 8th Sts., | CHATTANOOGA, Oct. 24, 1881.

General trade continues in a very satisfactory condition, though there is rather less of the "boom" in business than two weeks ago. In all lines of manufactured articles, however, the demand is urgent, and producers are greatly pushed and urged by their customers. The weather has been cool, with frosts at various points in the South Atlantic and Gulf States.

Pig Iron.-The only special feature in the trade is the scarcity of high grades. All the furnacemen run their furnaces on Mill as closely as possible. If any Foundry is made it is by accident, and seldom or never fit to be graded No. 1. This scarcity and the stiff state of the Eastern market tend to strengthen prices here, and a small advance is not an unlikely event. We quote: No. 1 Foundry, \$22 @ \$23; No. 2 Foundry, \$20 @ \$21; Gray Forge, \$18 @ \$19; White and Mottled, \$16 @ \$18; Car-wheel Metal, \$38 @ \$40.

Ores-Continue in rather low supply, and prices, as winter approaches, tend to harden, and contracts for the season could not now be made at quotations, although our figures represent the prices paid on supplies conracted for mostly last winter and spring. We quote: 50 % Brown Hematite, per ton, \$2 @ \$2.75; Red Fossil, \$2 @ \$2.25, delivered at furnace.

Miscellaneous Articles .- Old Rails \$26 @ \$28 per ton, mostly shipping demand. Wrought Scrap, \$20 @ \$25; Cast Scrap, \$10 @ \$15; Old Wheels, \$28 @ \$30.

Nails-Are extremely brisk at \$3.25 rates, al discounts on large bills and for cash. Makers are pressed with orders for present delivery, which they cannot fill.

Manufactured Iron .- All the articles in this list are active and strong. Bar is especially stiff at \$2.75. We quote: Railroad Spikes \$3.30; Track Bolts, \$4.25; Fish

Coal.-We quote Lump at \$4.25; run of mine, \$2 at mills.

Coke.—Furnace Coke, \$3 at point of con-umption; Foundry, 10¢ @ 12¢ per bushel.

Steel and Iron Rails.—Steel Bars, \$62 \$64 at mill; Iron, \$50 @ \$52; Small, \$57

BOSTON.

OCTOBER 22.—The Boston market for both Coke.—Owing to the railway blockade, business is very much restricted, as it is business is very much restricted, as it is very firm during the past week and the almost impossible to obtain cars, and while trade has been good in American Pig. There re 24 tie sc

not so much doing in Foreign Iron as there would be were prices somewhat lower, but as the Iron is holding firmly abroad and freights are high, there seems to be no reason for believing that prices will not remain high here. The furnaces are reported to high here. The furnaces are reported to have a rather light supply of Iron on hand, but they are producing steadily and it is thought that enough Iron will be produced to supply all requirements, though at present buyers experience some difficulty in obtaining large quantities of the best brands. The cooler weather has caused an increased demand, but it also allows of increased conmand, but it also allows of increased con-umption. Prices are firm here, and though some dealers think that prices will remain at about their present position, it is said that there have been sales of large lots above the regular quotations, and that many concerns regular quotations, and that many concerns do not desire prices to go higher, as they could not participate in any rise or derive advantage from it, being sold far ahead. American Pig.—The market is reported firm. Prices at ship ing ports are: \$25 @ \$26 for No. 1 X; \$22.50 @ \$23.50 for No. 2 X, and \$21 @ \$22 for Gray Forge. Small spot lots command \$2 @ \$3 per ton above these quotations. Foreign Pig.—Prices are strong; freights are high, and the market abroad is firm. We quote: Egliuton at \$24.50 @ We quote: Eglinton at \$24.50 @ Langloan, \$26.50 @ \$27; Gartsherrie, Carnbroe and Glengarnock \$24.80 @ \$26.50. Old Rails.—The demand is good, and the market firm at \$32 for American and \$30 for Foreign. Manufactured Iron. The excellent demand for Manufactured Iron continues and there has been no change as regards the ability of the dealers and mills to fill it. The mills are crowded with orders, and in some cases refuse any more at any price. The demand for Plate Iron has been exceedingly large, and, as we noted last week, the supply was not equal to the demand, and this has led to another advance in Plate. The inquiry for Bar Iron has become greater as the stocks grow smaller. wance in Plate. The inquiry for Bar Iron has become greater as the stocks grow smaller. The pressure of orders has become heavier and the tone is very firm, while but very few orders can be placed at the mills. Sheet Iron has been in excellent demand, and quotations are a little higher. The Nail companies are reduced in stock and some of them are out of regular sizes, and are drawing from the others, while the trade generally is excellent at firm prices. Dealers cannot fill their orders, but tell their customers that if they wish their orders will be booked and filled as soon as possible. Bar Iron.—The market is very strong at \$2.80 @ \$3. Horse Shoes are firm at \$4.25 @ \$4.33 ; Swedish and Norway are quoted at \$4 @ \$5 for Bars, and \$4.75 @ \$5 for Shapes. Plate Iron.—The demand is very good and prices are gain advanced. We quote: Tank at 3%¢; Refined at 4%¢; Shell at 4½¢; Flange at 5½¢, and Tubes unchanged at 40 % from list. Sheet Iron.—The business was good and there is an advance in Refined. We quote: Sheet Iron, 4½¢@ 4½%; ditto Stocks of Bar Fron are very small. We quote: Best English Cast, 14¢ @ 15¢; American do., 12¢ @ 12½¢; Bessemer Machinery, 5¢@ 6¢; Wedge and German, 7¢; English Spring and Calking, 7¼¢ @ 7½¢; ditto American, 5½¢ @ 6¢: Tire, 4¢ @ 4¼¢; Sleigh Shoes, 3½¢@ 3¾¢. Nails.—Quotations are very firm and regular sizes are in short supply, while the demand is very large. We quote \$3.40 @ \$3.50 for rod, per cask. Copper.—The Copper market is steady and firm, and though some sales of Ingot have been made at 18¢, cash, the of Ingot have been made at 18¢, cash, the companies are asking higher prices. Some jobbing sales were made at 1834¢. Copper companies are asking higher prices. Some jobbing sales were made at 18½¢. Copper manufactures are firm at the recent advance: Sheathing, 26¢; Braziers, 28¢@ 30¢; Bolt, 28¢; Copper Bottoms, 29¢@ 30¢; American Yellow Sheathing Metal, 17¢; Yellow Metal Bolt, 20¢; English Yellow Sheathing Metal, 14¢ in bond. Léad.—Pig Lead is easier at 5½¢ in carloads and 5½¢ in small orders; Bar, 7¢; Pipe, 7½¢; Sheet, 8¢; Tin-lined Pipe, 15¢; Tin Pipe, 35¢, all less 10½. Zinc.—The market is firm. We quote: \$5.80@ \$6 per 100 lbs. Small lots, \$6@\$6.25. Sheet Zinc is in short supply at 7½¢@7½¢. Tin.—The market has not changed here, though prices are strong again in London. We quote: 22¢@ 22¼¢. Tin Plates.—There is a good demand in Plates, especially in Cokes, and prices are firm. We quote: Charcoal Bright at \$6.50; Ternes at \$5.75@\$7.25; Cokes, \$5.50@\$5.75; ditto Ternes, \$5.25@\$5.50.—Commercial Bulletin.

LOUISVILLE.

Messrs. Geo. H. Hull & Co., Commission Merchants, report to us as follows, under date of Oct. 21, 1881: The market is firm for all grades of Hot-blast Iron, but transactions are limited in consequence of the difference in views of buyers and sellers.

Coke Mill could be sold readily at \$21.50, cash, Horge-shee Iron. Coke Mill could be sold readily at \$21.50, cash, but furnaces are asking higher prices, and buyers do not seem disposed to meet them at present. It looks as though buyers will have to come up to views of sellers. We quote, for cash, as below: FOUNDRY IRONS,

| No. 1 Han | ging Rock, Charcoal | \$28.00 @ | 20.00 |
|--|---|--|-------------------------|
| No. 2 | ** ** | 27.00 @ | 28.00 |
| No. 1 Sout | hern, Charcoal | 25.00 @ | 26.00 |
| No. 2 | 10 00 | 23.00 @ | 24.00 |
| No. 1 Hat | aging Rock, Stonece | oal and | |
| Coke | | 25.00 @ | 26,00 |
| | iging Rock, Stonec | | |
| Coke | | 24.CO @ | |
| | hern, Stonecoal and | | |
| No. 2 | | 82.00 @ | 23.00 |
| "America | n Scotch " | 22.00 @ | 24.00 |
| | y | | |
| Scotch | ********* | | **** |
| | MILL IRONS | | |
| | MILL INCAS | t. | |
| | reoal, Cold-short an | d Neu- | |
| No. 1 Ston | rcoal, Cold-short an
ecoal and Coke, Col | d Neu- | |
| No. 1 Ston
and Neu | reoal, Cold-short an | d Neu- | |
| No. 1 Ston
and Neu
No. 2 Ston | reoal, Cold-short an
ecoal and Coke, Col
tral | d Neu- d-short 21.50 @ | 22.50 |
| No. 1 Ston
and Neu
No. 2 Ston-
and Neu | recal, Cold-short an
eccal and Coke, Col
tral
eccal and Coke, Col | d Neu- d-short d-short 21.50 @ | 22,50 |
| No. 1 Ston
and Neu
No. 2 Ston
and Neu
No. 1 Misso | rcoal, Cold-short an
ecoal and Coke, Col
tral
ecoal and Coke, Col
tral | d Neu- d-short d-short 21.50 @ d-short 1-short 26.00 @ | 22,50 |
| No. 1 Ston
and Neu
No. 2 Ston
and Neu
No. 1 Misso
White and | recal, Cold-short an
ecoal and Coke, Col
tral
ecoal and Coke, Col
tral
ouri and Indiana Rec | d Neu- d-short d-short 21.50 d-short 1short 26.00 dort and | 22.50
22.00
27.00 |
| No. 1 Ston
and Neu
No. 2 Ston
and Neu
No. 1 Misso
White and
Keutral. | rcoal, Cold-short an
ecoal and Coke, Col
tral
ecoal and Coke, Col
tral
buri and Indiana Red
Mottled, Cold-sho | d Neu- d-short 21.50 @ d-short 1.50 @ 1.50 t 26.00 @ 17.00 @ | 22.50
22.00
27.00 |

amounting almost to an advance. However, a conservative feeling prevails on the part of a majority of the manufacturers, that augurs well for a continuation of present prices. Still, there is hope of the Cincinnation of present prices. Still, there is hope of the Cincinnation. A flying trip to St. Louis, Chicago, Cleveland, Pittsburgh and Cincinnati reveals the same trouble at every point, of railroad blockade. Things have come to such a pass, now, that there can be no relief short of a good boating stage in the Ohio River, but the railroads are much at fault in not providing sufficient force to amounting almost to an advance. However, at fault in not providing sufficient force to handle the extra amount of tonnage put on them by the natural demand, by the low

CINCINNATI.

OCTOBER 24.—Pig Iron.—During the past week there has been demand for all classes of Foundry Irons, and prices on Stonecoal and Coke kinds have been advanced from day to day, covering figures fully equal to \$1.50 per ton since quotations last week. Charcoal Foundry Irons have sympathized in the advance on Stonecoal and Coke kinds to some extent, but consumers, not being in immediate want for considerable quantity, do not press their orders. As yet Car-wheel from have not felt the advance in other grades, but it is thought that by the first of the coming month it will be developed that the stocks of Cold-blast Iron throughout the West and South are far less than was gen-West and South are far less than was generally supposed. Sales at the close of the past week were about as follows: Hanging Rock Charcoal Foundry, \$27.50 @ \$2\$; No. 1 Coke, \$25 @ \$26; No. 2, \$24 @ \$24.50; Stonecoal from 50¢ to 75¢ less; Softeners from \$23.50 @ \$25; Warm-blast, Charcoal Car-wheel, \$28 @ \$35; Cold-blast \$35 @ \$38, all to cars here, 4 months. Scrap—Carwheels, \$28 @ \$30; Old Rails, \$28 @ \$30; Wrought, 1¢ @ 1.40¢; Cast, 50¢ @ 70¢. Three of the rolling mills of this region have put part of their machinery in use with nonunion labor at Pittsburgh prices, the others remain idle. The meetings last week between remain idle. The meetings last week be-tween mill owners and representatives of the Amalgamated Iron Workers, or union

Mr. ASA SNYDER, Iron Merchant and Fur nace Agent, writes as follows under date of Oct. 24: The market for Pig and Manufac-tured Iron continues active and very firm.

| DIOMS GO TOHOWS ! | |
|------------------------------------|-----------------|
| No. 1 Scotch Pig Iron | 24.00 @ 27.50 |
| No. 1 Anthracite Pig Iron | 24.00 @ 27.00 |
| No. 2 | 22.00 @ 24.50 |
| No. 3 | 21.00 @ 22.00 |
| No. z Virginia Coke Pig Iron | 23.00 @ 24.00 |
| No. 2 | 22.00 @ 23.00 |
| No. 3 | 20.00 @ 22.00 |
| Virginia Charcoal B. C. Wheel Iron | 34 00 @ 35.00 |
| Wrought Scrap, No. 1 | 23.00 (2) 24 00 |
| Cast, Machinery Scrap | 20,00 @ 21,00 |
| Refined Bar Iron | @ 28-10 |
| Horse Shoes (Tredegar) | @ 4.00 |
| Mule " | (A 5.00 |

ST. LOUIS.

Messrs. HOFFER, PLUMB & Co., of St. Louis, write us, under date of Oct. 22: The market continues strong with an upward We quote: tendency.

| 4 | A |
|------------|----------------------------|
| | HOT BLAST CHARCOAL. |
| | \$27.00 @ 27.50 |
| | 27.00 @ 27.50 |
| Ohio | 29.00 (31.00 |
| | COAL AND COKE. |
| Missouri | 26.00 @ 27.00 |
| Southern | 26.co @ 27.00 |
| Ohio | 26,00 @ 28.00 |
| | MILL IRONS. |
| | 24.00 @ 25.00 |
| Cold-short | 22.50 @ 23.00 |
| CAR V | WHEEL AND MALLEABLE IRONS. |
| Missouri | 28.00 @ 33.00 |
| Southern | 35.00 @ 38.00 |
| Ohio | 35.00 @ 43.00 |
| | |

BALTIMORE.

W. N. WYETH, Iron and Steel Merchant. 46 and 48 South Charles street, reports us the following, under date of Oct. 24: Trade is very active at advanced values, of from to 2-10ths, and with stocks much

| Ref. Bar Iron, 1 to 6 x 36 to 1 10 10 28-10 @ 3 |
|---|
| |
| 1 to 4 1/2 x 1/4 to 2 1 10 2 8-10 @ 3 |
| 14 " 1/4 to 2, Round . |
| and Square |
| Hoop Iron, 11/4 wide and upward " 31/4 @ 31/4 Band Iron, from 11/4 to 4 in. wide " 3 @ 31/4 |
| Horse-shoe Iron 46 23/ @ 4 |
| Norway Nail Rods " 51/2 @ 6 |
| Black Diamond Cast Steel " 131/2 @141/2 |
| Machinery Steel |
| Cast Spring Steel |
| Perkins' Horse shoes & keg of 100 lbs\$4.37 |
| " Mule shoes |

Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From our Regular Correspondent.)

LONDON, ENG., Oct. 10, 1881. THE WEEK

has not been productive of great changes in connection with our metallurgical industries, but such alterations as have taken place have been wholly and absolutely in upward

has been construed as being an evant courrier, but I do not think it need be regarded as being in any sense official. The New British Iron Company are not working in accord with the other list houses, them by the natural demand, by the low freights stimulating early shipment, and by the low water in the Ohio River and its tributaries. This threefold business they are trying to handle with the same force formerly employed. Nails are very firm, and we hear of some large orders refused because mills cannot furnish promptly enough. Outdoor work is being pushed as fast as possible to secure completion before the bad weather comes on.

New British Iron Company are not working in accord with the other list houses, and they are not likely to proceed on parallel lines. Conjecture is, perhaps, somewhat unnecessary in the face of the fact that the quarterly meetings take place this week, yet I cannot help placing on record my impression that there is nothing at present to warrant further rises in marked iron. That the manufacturers are well employed and fairly sold forward I do not deny, but I ent to warrant further rises in marked iron. That the manufacturers are well employed and fairly sold forward I do not deny, but I am of opinion that they have not yet had time to test the effects of the recent adwances. A few weeks hence they will know more precisely how they stand and may then act in accordance with the evidence they possess. There has been a large volume of business done within the past few weeks, and there is still a steadily good demand, yet there is not that overwhelming rush which would justify panic prices. There are gentlemen who are doing their best to work up a "boom" among us, and there are "bulls" who have a vital interest in everything moving us, rapidly. On the other thing moving up rapidly. On the other hand, we have no small number of persons who have vivid memories of 1871-3 and 1879-80, and they will not forget the need of prudent caution, nor will they advance prices without sound reasons for so doing. It is very difficult to predict what may hap-It is very difficult to predict what may happen here within the next few weeks, but I should almost "vote straight" for rapid fluctuations collaterally, followed by a steady gain in values. Any absurd "ballooning" would spoil this programme utterly and entirely. The more experienced merchants and others are already cautioning their fellows of the possible dangers of the situation, although they do not seek to hidd their imalthough they do not seek to hide their im pression that there is good ground for enter taining very sanguine views as to the near

> The enhanced value of money, brought about by the action of the Bank of England in raising the rate of discount to 5 per cent., may have a tendency to check speculative dabbling in iron, as well as other varieties of speculation, but it is not considered likely that it will interfere to any appreciable ex Very much depends upon your money market, the aspect of which at the time of writing is extremely puzzling to us. It is reported that money is dear with you, but there are collateral pieces of information which justify the suspicion that Wall street is playing off a juggle, and that there is more manipulation than is apparent here as yet. In any case, the repression of undue speculation will be of high service just at speculation will be of high service just at this juncture. Everything in the iron and steel trades is hopeful, and, so far, fairly sound. Left to legitimate influences, a healthy growth will ensue. In the other event nobody can foretell what might hap-

> As regards our home trade there are extremely conflicting reports. Many house report extreme dullness, while others state that their work is chiefly on home account. Both these parties are doubtless speaking the truth. Mr. Gladstone says he himself the truth. has made careful inquiries as to the results of the harvest, and he finds that it has been singularly uneven and irregular. In some countries it has been superior, in others below an average. There can be no doubt, however, that the rise in prices has induced many buyers to come forward in order to replenish their attenuated stocks of iron and bordward. With this tension extinuation. hardwares. With this tenative stimulation of the home market there has come a very marked influx of foreign and colonial orders —indeed, the Board of Trade returns for September afford abundant proofs of the increase in our export transactions. These orders have yet to be placed in many cases, so that on the whole it is pretty plain that there is a good consumptive demand, and that the market only requires to be "severely left alone" to attain strength and robust-

> In detail, the iron markets have remained firm all round on the basis of the prices mentioned by me last week. The list houses maintain the £7. 10/ standard for marked bars, with other sorts in proportion. Lord Dudley's new prices include:

Rounds, lowest quality....

| | Single Dest | 9 | 10 |
|---|---|-----|-----|
| | Double best | 11 | 0 |
| | Treble best | 13 | 0 |
| , | Rivet iron, single best | | 10 |
| ١ | Double best | | 0. |
| | Treble best | | 0 |
| ١ | Angle iron, lowest quality | 8 | 12 |
| ١ | Single best | YO. | 0 |
| | Double best | | XO. |
| | Treble best | 13 | IO. |
| | T fron, lowest quality | | 9 |
| | Single best | | IO |
| | Double best | | 0 |
| | Treble best | 1.4 | 12 |
| | Strips and hoops varying between 6 in. | | |
| | to 21/4 in., not thinner than 14 W. | | |
| | G, and 1% in. to 1 in., not thinner | | |
| | than 19 W. G., lowest quality | 8 | 13 |
| | Single best | 10 | 0 |
| | Double best, | | ro |
| | Treble best | 13 | TO |
| | Hoops. % in., not thinner than 20 W. G., | | |
| | lowest quality | 0 | 12 |
| | Single best | | 0 |
| | Double best | 12 | XO |
| | Treble best | 7.4 | XO. |
| | 34 in., not thinner than 20 W. G., lowest | | |
| | quality | | 12 |
| | Single best | | 40 |
| | Double best | 23 | zo. |
| 1 | Treble best | 15 | 10 |
| ı | The sheet iron manufacturers are | | m |
| ı | £8 @ £9, and have mostly withdraw | | |
| ١ | quotations. The galvanizers are corr | | |
| 1 | | | |
| J | ingly stiff in their views, their orde | | |
| 1 | being well filled up to December. In | on | rai |

vances on the part of individual firms, and the production for the first quarter of 1882. the free-trade vs. fair-trade theories, and

the been excited by the development and vicissitudes of speculative operations during the week, but on the whole it has gained in price, although warrants closed below the average of the period. The restriction of production has reduced the number of furnaces from 121 to 105. Messrs, Baird & Co. and Messrs, Merry & Convivenance, the and Messrs. Merry & Cunninghame, the strongest firms in the trade, are said to be warm supporters of the new policy; hence it is likely to be carried out consistently. At Gartsherrie there are now 13 furnaces at work out of 14 built; at Coltness, 10 out of 12; at Glengarnock and Ardeer, 12 of 14, and at Eglinton, Lugar, Muirkirk and Portland, all of which make iron branded Eglinton, 12 of 19. Of the total 105, 9 are running on hematites, leaving 96 on ordinary Of the total 105, 9 are run ning on hematites, leaving 96 on ordinary iron, against 104 a year ago. The course of warrants daily since my last has been: Oct. 3d, 52/6 @ 52/8½; 4th, 52/7½ @ 53/; 5th, 52/8 @ 53/6; 6th, 53/5 @ 52/8; 7th, 52/6 @ 51/9. The shipments last week increased largely; to date this year they have decreased 97,715 tons. In Connal's stores there are now 594,568 tons (an addition of 4302 tons on the week) speculative business done and considerable fluctuation in the price of warrants. On Monday the market advanced from 52/to Monday the market advanced from 52/ to 52/9, cash, and on Tuesday it was irregular with a considerable business between 53/ and 52/7½ per ton. On Wednesday the market was rampant, with a large business between 52/8½ and 53/6 per ton. Yesterday the market was weaker, the price having receded from 53/5 to 52/9 per ton. To-day the price rapidly receded from 52/6 to 51/6, cash classing at 51/6 sellers, buyers 51/8 per the price rapidly receded from 52/0 to 51/0, cash, closing at 51/0 sellers, buyers 51/8 per ton. In the early part of the week makers advanced prices all round; since then, in sympathy with the market, quotations are easier. The shipments last week were 16,434 tons, as compared with 11,725 tons for the corresponding week of last year."

| We quote: | | | No. I. | No. 3. |
|------------------|--------------|---|---------|--------|
| G. M. B., at Gl. | asgow | | 53/ | 50/6 |
| Gartsherrie, at | | | . 6x/6 | 53/ |
| Coltness, | 0.0 | | . 62 6 | 53/6 |
| Summerlee. | 46 | | 6x 6 | 52/ |
| Langloan, | 0.0 | | | 54/ |
| Carnbroe, | 6.6 | | | ST/ |
| Calder. | 46 | | . 61/6 | 53/6 |
| Glengarnock, a | at Ardrossan | n | . 55/6 | 52/ |
| Eglinton, | 0.0 | | . 53. 6 | 49/6 |
| Dalmellington. | | | . 53 6 | 50/ |
| Shotts, at Leit | h | | . 62/6 | 53/6 |
| Kinnell, at Bo' | | | | 50/ |
| Carron, at Gra | | | | 53/ |

CLEVELAND IRON has been steady as regards makers, albeit there have been variations in the open market.
At present quotations for G. M. B. pig, net

| re: | 0. 0. | ****** | 000 | wharves | | , |
|------|-------|--------|------|-----------------------|------|------|
| 0, 1 | | | 45/ | Mottled |
 | 40/6 |
| 4 | 0 | | 42/6 | Refined M
Kentledg | | |

The shipments of last week from the port of Middlesboro' alone comprised 22,925 tons of pig iron, 2954 tons manufactured iron, and 20 tons of steel. All the local finished iron, foundry, engineering, &c., concerns are busily engaged and have good prospects. The official returns of the Cleveland Ironmasters' Association for the month of September 11 of the control of the cleveland Ironmasters' Association for the month of September 11 of the control o tember show the following summarized partember show the following summarized particulars: Furnaces working, 118; make of Cloveland pig, 167,976 tons; make of other pig, 52,859 tons; furnaces on other than Cloveland pig, 27; makers' stocks, 1,49,771 tons; makers' stores, 82,754 tons; in Con-nal's and N. E. Railway stores, 201,916 tons. Total stock September 30, 434,441 tons, against 437,151 tons on August 31 1881—a decrease of 2710 tons. Shipments foreign, during September, 45,458 tons shipments, coastwise, 33,439 tons—a de-crease of 6004 tons compared with August. These returns are regarded as being favor-

west coast hematites
are still strong in all respects. The home demand for steel making and other purposes is fully maintained, and there is no falling off in the export demand for the Continent and the United States. All the smelters are busy and are fully occupied in keeping their engagements. Merchant sellers in some instances have been compelled to buy in at the enhanced rates, in order to complete their deliveries. Mixed lots of Nos. I, 2 and 3 are quoted 60/ per ton, and makers' brands at works are as under:

| | No. I. | No. 2. | No. 3 |
|--------------------|----------|------------|------------|
| Cleator | . 65/ | 62/6 | 01/ |
| Lonsdale | | 60/ | 59/ |
| Workington | 61/ | 60/ | 59/ |
| West Cumberland | 62/ | 60/ | 59/ |
| Lowther | | 60/ | 59/ |
| Moss Bay | | 60/ | 59/ |
| Distington | | 60/ | 59/ |
| Harrington | | 60/ | 59/ |
| 8lway | | 60/ | 50 |
| Maryport | | 62/ | 60, |
| There are 61 furns | ices at | work out | of 81 |
| making 31,500 for | is weekl | y. Last | week's |
| -1. Commenda more | ned tome | of rive is | CANA CARAC |

shipments were 13,218 tons of pig iron and 3948 tons of rails and blooms. Cumberland ores are 12/6 @ 14/6 per ton at the mines, and Spanish ores, 16/9 @ 17/6 per ton ex

von, at Derby, spoke favorably of reci-procity. At the Social Science Congress and elsewhere the subject has also been discussed.

THE BOARD OF TRADE RETURNS

for the month of September are of a very encouraging nature, seeing that they show a considerable increase in our exports, an increase which would have been even greater had it not been for the lessened production of cotton manufactures caused by the action of the Lancashire mill owners in opposition to the Liverpool "corner." The imports of the month were of the total value of £33,191,-225, against £34,275,327 in September last, the diminution being mainly owing to our lessened purchases of wheat and breadstuffs. The month's exports were valued at £20,000,-563, as compared with £20,027,347 in September, 1880, and £17,402,242 in September, 1879. The aggregate quantity of iron and steel reached 376,517 tons, worth £2,562,268, against 297,913 tons, valued at £2,204,285, in the same month of 1880. There were increases in pig iron, railroad iron, wire, last week increased largely; to date this year they have decreased 97,715 tons. In Connal's stores there are now 594,563 tons. In (an addition of 4392 tons on the week), against 474,765 tons this date in 1880. Ballast pig iron is 47/6 alongside. Freights are rather scarce at 11/@12/, steam, Glasgow to New York. Writing from Glasgow to New York, with a very large speculative business done and considerable fluctuation in the price of warrants. On Bessemer blooms or other steel of low value, the average price being about £8 per ton only. The chief items exported were:

| Articles. | Quan | titles. | Val | ues, |
|-----------------------|-----------|-----------|----------|---------|
| | 1880. | 1981. | 1880. | 1881. |
| Firearms, small, No., | 27,393 | 20,512 | £26,243 | £29,604 |
| Brass, manufactures | | | | 0.4 |
| of, not being ord- | | | | 9.1 |
| nance, cwts | 7,718 | 8,949 | 31.018 | 36,976 |
| CARRIAGES. | | | | |
| Railw'y carriages for | | | | |
| passengers, No | 2 | 18 | 325 | 5 614 |
| Railway trucks, wag- | | | | |
| ons, &c., No | 176 | 175 | 9,748 | 11,654 |
| Coal, &c., tons | 1,684,006 | 1,873,010 | 750,299 | 846,080 |
| Copper, unwt., cwts. | 28,446 | 41,254 | 94,511 | 132,939 |
| Copper, wrt., cwts | 22,417 | 35,350 | 83,455 | 130,735 |
| Mixed or yellow | | | | |
| metal Sheathing, | | | -0.00 | |
| cwts | 21.075 | 35,002 | 78,443 | 108,886 |
| Hdw. and cuttery | | | 298,069 | 340,362 |
| IRON AND STEEL. | | | | |
| Pig, tons | 127,026 | 161,952 | 390,714 | 446,460 |
| Bar angle, &c., tons. | 26,577 | 24.947 | 188,430 | 167,824 |
| Railroad, tons | 50,130 | 80,910 | 374.271 | 553,700 |
| Wire (except telegr. | | | | |
| wire), tons | 4,068 | 6,0% | 50,402 | 87,704 |
| Hoops, sheets, and | | | | |
| boiler and armor | | | Occ who | |
| plates, tons | 24,294 | 29,175 | 265,338 | 310,383 |
| Tin plates, tons | 19,660 | 21,145 | 359,395 | 358,991 |
| Cast or wro't, tons | 27.525 | 25,443 | 340,758 | 342,840 |
| | | 0 | 15,141 | |
| Steel, unwr'ght, tons | 3,877 | 8,758 | 60,642 | 32,338 |
| Man'factures of steel | 3.077 | 16,443 | 90,048 | 173,330 |
| and iron, tons | 9 222 | 1.660 | 69.104 | 88,612 |
| Lead, tons | 2,975 | 4,244 | 47.5281 | 64,468 |
| MACHINERY AND MILL | 6.975 | 40-44 | 47.780 | 04,400 |
| WORK. | | | - 1 | |
| Steam engines | | | 196,320 | 220,152 |
| | | | 612,3811 | 631,125 |
| Plate and pitd., &c., | | | 1 | 201100 |
| and gilt wares | | | 19,397 | 21,025 |
| Tel. wire & appara- | | | 31.197 | 10-3 |
| tus connectd there | | 1 | 1 | |
| with | | | 1.768 | 28,524 |
| Tin (unwrt.), cwts | 8,034 | 6,443 | 35,201 | 31,208 |

TO THE UNITED STATES we sent as under (given comparatively) :

| Articles. | Month of
Sept.,
1881. | Month of
Sept.,
1880. | Month
of Aug.,
1881. |
|--|-----------------------------|-----------------------------|----------------------------|
| Alkali, cwts | 875.968 | 200,117 | 362,103 |
| Hardware and cutlery, £. | 44,872 | 42.663 | 44,968 |
| Iron-Pig, tons | 43,046 | 26,061 | 48,246 |
| tons | 1,030 | 1,170 | 943 |
| Railroad, all, tons
Hoops, sheets, plates, | 26,321 | 14.531 | 29,034 |
| &c., tons | 5.522 | 2,154 | 7.038 |
| Tin plates, tons | 16,074 | 11,805 | 10,641 |
| Cast or wrought, tons | 323 | 2.983 | 516 |
| Old wrought, tons | 6,692" | 4.571 | 8,872 |
| Steel, unwrought, tons | 12.634 | 1,304 | 11,719 |
| Lead, all, tons | | | 50 |
| Steam engines, £ | 2,342 | So | 10,042 |
| Other machinery, &c, £ | 11,901 | 25,612 | 18,715 |
| Tin, unwrought, cwts
Special Return-Iron rails, | 64 | 432 | 955 |
| tons | 5,022 | 3,880 | 5.763 |
| Steel rails, tons | 20,114 | 10,052 | 23,820 |

THE BLAST FURNACES AT WORK in the United Kingdom at the present time are said by the Ironmonger to number 562,

| follows: | | | | | | | |
|--|--------|-----------------|-------|--|--|--|--|
| | Blast | Blast Furnaces. | | | | | |
| Great Britain. | Built. | At work. | Idle. | | | | |
| Scotland
Cleveland (including Northum-
berland, Durham and North | 119 | 105 | 4.1 | | | | |
| Yorkshire) | | 115 | 48 | | | | |
| Cumberland and Furness | 31 | 6t | | | | | |
| Derbyshire | | 7 | 18 | | | | |
| Gloucestershire | | | 7 | | | | |
| Hampshire | 1 | | T | | | | |
| Lancashire | 5.0 | | 22 | | | | |
| Lineolnshire | | 15 | 5 | | | | |
| Northamptonshire. | | 16 | 9 | | | | |
| Shropshire | | 9 | 10 | | | | |
| Somersetshire, | 1 | 1 | | | | | |
| Staffordshire (North) | 37 | =5 | 12 | | | | |
| staffordshire (South) | | 47 | 1,8 | | | | |
| Wittshire | 7 | | 4 | | | | |
| Wales (North)
Wales (South) and Monmouth- | | | 3 | | | | |
| shire | 152 | 62 | gà | | | | |
| Yorkshire (West Riding) | 51 | 27 | 2.4 | | | | |
| Total | 985 | 362 | 423 | | | | |

and wire of brass, copper, &c., %d, per 1b. ent nails and wire nails, 10/ per ton; iron trabes, 5 per cent.; mottled, blue and ename. 10 per cent.; coffin furniture, 5 @ o per cent., and many kinds of hardwares, al appliances is likely to be held at the rystal Palace, London, during the winter. The miners and iron workers in several parts of the country are agitating for higher wages. John Brown & Co. and Charles Cammell & Co., of Sheffield, have received a Brazilian order for armor plates, tood tons, £75,000. The hardware trades of Sheffield, Birmingham, Wolverhampton, &c. are all well engaged, and prices are stiffen ing in consequence of the rise in iron.

FOREIGN

THANCE. Moniteur des Interets Materiels.

Hance.

Honitew des interets Materiels.

Frans, Oct. 9, 1831.—Metals.—Business in general has been more active; at the same time all sorts of raw material advance so fast that consumers begin to hesitate and a reaction may soon follow, so near the winter months. All Motals except present have again improved. We quote to-day; Copper—Chili Bars. 102.75 @ 105.35; Ingots and Slabs, 172.50; Best Selected, 177.50, and pure Corocoro Ore, 165. Tim—English Refined, 260; Banca, 325 o; Billitton, 272.75, and Straits and Australian, 235. Lead, 30 @ 40, and Spotter, 43.75 & 44.25. Fron.—The tendency in France still remains upward. In the Ardonnes there is great activity, not only in railroad material, but equally as much in tools and hardware. Aveyron.—The Pricans Company has sold to the France Steel Works, of Isbergue (Pas-de-Calsis) its six blast furnaces, iron works, coal mines and material for 7,000,000 frances. In the Haute-Marne, notwithstanding the lateness of the season, orders arrive almost to the same extent as during the summer time, much being due in contracts for 1832. Some rolling mills there have advanced the price of Coke Merchant No. 1 to 20 france; Mixed sells at 21 @ 22 Sheets will soon be 22.50 @ 32,50. In the Loire and Rhone region there is great activity; Merchant Steel is getting scarce in that quarter, stocks are exhausted and production does not maffice for the demand. In the Meurthe and Moselle, Pig Iron now also advances rapidly, and No. 3 Foundry brings 8 francs. Longwy can now burn out 250,000 tons in 10 months. Nancy is equally lively. In the North orders arrive as equility lively. In the North orders are spining at 20.50; Co

(Revus Universalle.)

(Revus Universalle.)

Heresells, Oct. q. 1851.—Iron.—Orders abound, but more for supplying domestic wants than for export: should the export trade also take a fresh start, there is no doubt but what a further general rise in prices would ensue at once. For the present we repeat our previous quotations—i. e.: Merchant. No. 1, 13 francs; Thick Sheets, 18 francs, with an improvement impending therein. Pig Iron is unchanged, 5.60 francs; it is if anything a livide weaker, notwithstanding the rise of yet in Luxembourg. Beams have been firm at 18.50 francs; at this figure they are readily taken for French account. Steel works are doing remarkably well in Belgium; production in engaged beforehand for a long time. The many new Steel works to be started in Belgium have apparently a fair prospect before them. A good many Iron and Steel works have called meetings of shareholders, in order to acquain them by anticipation with the results of the campaign drawing to a close. These results are pretty uniformly favorable—larger dividends will be paid; if, therefore, improvements are to be introduced in machinary, 60, the parties interested may determine at once instead of waiting for tardy inventories and annual balance sheets. There is such constant progress going on in methods of production in competing countries that Belgium cannot be too alort in adopting what is good and indispensable. Ocai.—Th. stride of a week ago has been of short duration; the demand for Coal is brisk at unaltered prates.

Ice Can. Borsenhalle.

Hamburg, Oct. 9, 1881.—Iron.—There has not been much change in this branch since our last weekly review. Business proceeds with the utmost regularity, dealers and consumers being about equally busy. We can, however, only repeat that the situation in Germany, although orteinly ratisfactory, is by no means as brilliant as some people represent it, for prices obtained do not, in many instances, come up to expectations. Pig Iron continues in its upward course, foundry especially so, while Puddle Pig follows slowly. In Westphalia, Merchant Iron is firmly supported at the recent advance. In Upper Silesia speculators have made efforts to bring about a further rise, but rolling mills there are opposed to it, and go on selling at the prices lately agreed upon. All Structural and special Iron meets with a ready demand in both districts named, particularly for Central and Southern Germany. Steel Ratis are firmly held by the cembined works. Froight cars have become insufficient to number on some milroad lines. Car makers are therefore busily cargaged in turning out the necessary rolling stock wanting. We cannot quote Iron any higher than hast week, although in the case of Pig more is saked and in some cases obtained. Metals are still rising, although sales are light. We quote: Lead—English Pig, 16,50 @ 17; ditto Sheef, 17 @ 17,20; @ 17,80. Copper is higher. We quote Drontneim. 69 @ 70; Wallaroo, 0; Blectrolyte, 73 and Calumet and Heda, 70 @ 80. Tin its firm at 104 @ 108. Spelter has advanced to 10.55 @ 10.50 marks per so k. 28. spot and to arrive.

Drisseldorf, Oct. 11, 1881.—Iron.—We receive the ensuing report from our Dortmund correspondent dated yesterday: "The better feeling and firmness here have been rather on the increase. Our blast furnaces are delivering on large orders: they show no inclination to make contracts much shead, as they expect higher prices. Fig. Iron has undergone no change. We quote: Dortmund Foundry Pig., 74 marks, for No. 1; Gray ditto, 62; Spiegeleisen, 74 @ 75, and Dortmund Bessemer Pig. 68 @ 70. The Lauxembourg blast farnaces have advanced their price from 45 france; so francs, and the Hoerde people will advance their figure no doubt correspondingly. The rolling mills in this vicinity are steadily in receipt of large commands for Rod Iron, Coarse sheets, Corners, Iron Sleepers, Hoops and Rolled Wiro. There is not a very lively demand for Fillars, the remaining articles of Structural Iron, and thin Sheets. Nearly all makers insist upon a couple of months are to deliver any new orders in, and we do not believe there is one that will undertake now a deliver in 1886 at a fixed time. An advance of clience in 1886. Mearly all makers insist upon a couple of months in me to deliver any new orders in, and we do not believe there is one that will undertake now a delivery in 1888 at a fixed time. An advance of 5 marks per ton is now asked on Merchant Iron. Sheet Iron has not changed in price. Our Besemer steel works are loaded down with orders, even for 1888, for Rails, Blooms, &c. All tool and hardware manufacturers are now also very busy in filling orders. From Western railroads, I hear, extensive orders for railroad cars are unpending; our car works have advanced their prices by common accord as fin v.ew of higher iron prices. As for the remaining branches, such as boiler makers, machine shops ace foundries, they have all of them received their full share of work. In every direction from works make repairs and new machines y investments, neglected for years past, on a most extensive scale. This disseminates activity through every department of froe and Steel industry more or less. Bridge builders compensation in the shape of orders for sheek, Sc., from mines. Goal gots to be more and more active; it would still be more so it freight cars were more abundants? In the Moselle and Sarro region there is great gowiviry, both in Iron and Coal, the latter at a partial inthere is great gotivity,

(Koch & Vlierb

ROTTERDAM, Oct. 7, 1831.—Tim.—Since the discount has been raised in London Tin has become lacre quiet. Banca has sold at 37,75 guilders per co-kilos, and Billion at 57,50. This recoil, we believe, will be temporary merely, for the market begins to look up slightly while we write, and holders ask 25c. above the figures quoted. Statistics at the close of last month have been favorable enough to attract general attention. We shorefore give them below:

| r | therefore give them belo | W: | | |
|----|---|--------------|---------------------|------------|
| 8 | THE TIN POSITION IN E | NGLAND | AND HO | LLAND. |
| d | | Sept. 30, | Sept. 31 | |
| f | Stock of Banca in Hol- | Tons. | Tons. | |
| 9 | land | | 1,660 | 8 |
| | Straits and Australian | 1,355 | 3,134 | 1,4 |
| | in London | 6,696 | 7,013 | 7.5 |
| | Total stock | 9,301 | 10,796 | 9.75 |
| | Straits afloat
Australian afloat | 250 | 780
250
1,630 | 1,30
10 |
| 1 | Total afloat | 2,800 | 2,660 | 2,80 |
| | Banca, new stook
Banca afloat by sail | 1,530
305 | 1,573 | 1,92 |
| 1 | Total | 1,855 | 1,690 | 2,25 |
| - | Deliveries in Holland
Deliveries in London | 737
1,538 | 469
1,228 | 71 |
| 1 | Total deliveries | 2,275 | 1,699 | 1,99 |
| 1 | Price of Banca fl. | | fl. 51 | fl. 54 3/4 |
| ı | IN HOLLAN | | | |
| 1 | BANGA. | slabs. | r88o,
Slabs, | Slabs. |
| 1 | Deliveries in September.
since Jan. 1 | 13,300 | 91,544 | 104,117 |
| 1 | Stock on warrants at
Amsterdam
Stock on warrants at | 21,945 | 26,444 | 22,800 |
| I. | | v . 0 . 9 | | 20 600 |

AUSTRIA.

36,803

96,203

32,510

107,213

35,430

118,204

Total.....

BILLITON.
Deliveries in September. 17,200 singe Jan, 1.... 88,608

Stock in Rotterdam and

(Austrian Trade Journal.)

VIENNA, Ook 9, 1881.—Iron.—Most Iron works in Austro-Hungary are favorably situated at present, in many cases remarkably so. Many fresh orders are received continually, and these, together with previous ones, keep up a fair amount of activity and a rising tendency in prices. In Hungary Merchant Iron has been raised in price ½ forin per too kilos; the Bohemian combined rolling mills intend following suit. There is a brisk demand for Sheet Iron, as well as for various species of Structural. The Hungarian Government has accepted the offer of 12 florins per 100 kilos, at which the needed 11,000 tons Steel Rails were tendered by the combined Austrian makers, deliverable at such railroad station in Hungary as the Government will designate. Iron—15 firm with an upward tendency. We quote: Pig. 44; Grey ditto, 46; Beasemer ditto, 48; 25; Bohemian, 100 & 110; Sheets for looksmiths, 160 & 175; ditto for Roofing, 150 & 185; ditto for Boilors, 100 & 120; iffte for Tanka, 130 & 160, and Filars, 150 & 120; floring, all per ton. Metale—Have advanced so rapidly abroad that our market has been unable to keep pace with the improvement. The movement in England and Holland being to a considerable extent speculative, it does not inspire much confidence here so near the dull winter months. Both dealers and consumers operate with the utmost caution, and in no instance do they anticipate wants. Frices being wholly nominal, we abstain from quotations. (Austrian Trade Journal.)

EAST INDIES.

PENANG. Sept. 10, 1681.—Tin.—The market has, on the whole, been firm, fluctuations being but slight during the last fortnight under review. Laroot was paid \$28.22\% @ \$28.40, and Yunk Ceylon, \$28.10 @ \$25.35. For America only 1000 picula were taken, while Chinese took 1100, 1000 mostly, we believe, to be shipped to Singapore. The stock in baxaar is estimated at 900 picula, and the price closes firm at \$28.40. Rechange, 3/9\% for 4 months' sight bank bills.

METALLURGICAL NOTES.

CAVITIES IN CAST STEEL.

Dr. F. C. G. Mueller, of Brandenburg. after extended researches in regard to gas bubbles in Bessemer steel, has arrived at the following conclusions: In the ordinary process of casting steel ingets by running the hot metal into cold ingot molds, much diffioulty is found in obtaining thoroughly sound castings. This arises mainly from two evils, due to entirely different causes: 1. The central funnel-shaped cavity, due to shrinkage of the interior after the outside has set. 2. Dispersed cavities, due to gases imprisoned in the cooling metal. The former always makes the top of the ingot worthless, and sometimes extends far into the interior, but this can be prevented by proper attention in casting and by special methods. The latter is much more difficult of cure. The fluid metal always holds a considerable quantity of occluded gas, and this, when the metal sets, draws together into small bub-bles. In many kinds of steel the ingot boils up during the process of running. Such ingots are to be looked on as sponges filled with gases, and if cut across when cold, are found to present innumerable worm-shaped cavities. If, as is usually done, the found boiling is stopped by covering in the ingot with sand, the bubbles are found to be ar-ranged radially in two rows all round the outside of the section, while the central part, and also a skin about ½ inch thick, is quite sound. The reason of this phenomenon is that the metal, in splashing down into the mold, loses a part of its occluded gas, and therefore is no longer in a saturated condition. When, therefore, the outside begins to set, the gases first draw into the interior until this becomes saturated, whereupon the formation of bubbles begins and the mass boils over. The stopping of the and with sand next causes a severe pres-sure within the still fluid parts, and the gases are thus kept in solution (or kept from forming bubbles) even during the process of setting. This pressure is itself a source of danger, as, if the sand is removed too soon,

danger, as, it the sand is removed too soon, an explosion may take place.

These defects are not peculiar to Bessemer steel. They are also found in Siemens-Martin and crucible steel, but intermittently, appearing and disappearing without visible cause. Even if an ingot does not boil, and has an apparently sound head, it may still have cavities here and there in its bulk. Its

queezing, in the subsequent processes. Even the red fumes cease (usually in about half an ails with honeycombed skins (whe thin outer layer has given way in the furnace, and allowed the cavities to communicate with the air) may give thoroughly good results when tested. But for steel castings such cavities are obviously prejudicial, and for many purposes have altogether pre-vented their use.

The exact nature of the gases thus occluded has been much discussed, it being generally supposed that they are mainly carbonic oxide. Gautier was the first to treat the point as being settled by experience, and he announced that the soundness of the cast-ings in Terrenoire steel, and also in Krupp's and in the Bochum steel, was due to the presence of silicon neutralizing the carbonic This was generally accepted, in spite of the known fact that most of the porous German and Austrian steels were quite as rich in silicon as those above mentioned. The matter was in this condition when Dr. Mueller resolved to test it by direct experi-The experiments showed that the ment. gas consisted, not of carbonic oxide, but of hydrogen mixed with a little nitrogen, which fact was verified not only for cast steel, but for many descriptions of iron. Two specimens of steel, in cylindrical form, made from the same perfectly sound ingot, but one forged and the other not, gave the following results:

Percentage Composition of gas. H. Ni. CO. Total. Unforged steel... 15.5 73.4 25.3 1.3 100.5 This seems to show that a certain quantity of gas is occluded among the molecules of the steel, even where there are no visible cavities, and that this gas consists of hydrogen with about one-fifth of nitrogen. The latter is no doubt derived from the air, and the hydrogen from the moisture contained in the large quantity of air which mixes with the metal, especially in the Bessemer process. The absence of CO is remarkable, process. The absence of CO is remarkable, because it has been shown by Troost and Hautefeuille that it is readily absorbed by red-hot iron, and because it is developed in large quantities in the converter. But with fluid it either is not absorbed at all or in muld it either is not absorbed at an orm small proportions computed with hydrogen and nitrogen. It may, however, act in another way, namely, by freeing the metal from dissolved gases in the same way as when water is saturated with an easily soluble gas, and then exposed to a current of gas which will not dissolve in the water, the which will not dissolve in the water, the latter carries away with it a large portion of the former gas. This may explain why samples taken in the middle of the Bessemer process are often quite sound, while those taken toward the end, when the development of CO has ceased, are porous. It also explains the fact that at the Bochum and Hösch (Dortmund) works, absolutely sound Bessemer ingots are obtained by blowing the charge completely dead and then ing the charge completely dead and then pouring in 7 per cent. of fluid spiegeleisen. A violent reaction takes place, due to the carbon of the spiegeleisen combining with the oxygen of the metal to form CO, and this probably carries off mechanically the hydrogen dissolved in the metal, which would otherwise form cavities in the cold

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It will be noticed that hydrogen was pres ent, and in about the proportion demanded by the theory, so that in fact CO is not only innocent of the production of cavities in steel, but may actually be used to prevent them. Another mode of attaining this end would be by thoroughly drying the air before blowing it through the metals, so as to stop the introduction of hydrogen. This could be done by using burnt lime, with little expense. The nitrogen would of course remain, but it is uncertain whether this by itself rould be beautiful. itself would be harmful.

STEEL FOR HEAVY ORDNANCE.

A 43-ton gun, largely consisting of steel, is being constructed at the Royal Gun Factories in the Royal Arsenal at Woolwich, and one of steel coils, 100 feet in length and weighing 4 tons, was coiled recently with an amount of simplicity and success which fully demonstrated the workability of modern steel. Instead of the rigid, brittle material which steel is generally duced in bars or plates as cheaply as iron and nearly as available for every purpose. These qualities deprive it of the objections hitherto entertained with regard to its employment in gun making, and the 43-ton breachleder ner in processing and the second of the control of t breechloader now in progress will, with the exception of the outer coil or jacket, be the needles pass under the old process, nearly all steel. In the experiments which have been carried out with the new material it is therefore little wonder that an it has been found to be remarkably pure and free from laminæ, or dross, which is and free from lamine, or dross, which is always present to some extent in wrought iron, and its toughness has been satisfac-torily proved by every kind of strain. Welded into homogeneous mass it forms a cylinder of a quality which is said to have never hitherto been equalled. A new furnace for making the steel in bulk is in operation at the gun factories, and estabishes a marvelous advance upon the only method in vogue a few years ago, when a bar of steel required for its production some hundreds of small crucibles ELECTRO-ASSAY OF COPPER ORES

As a simple, expeditious and fairly accurate method of assaying copper ores, it is proposed to reduce the ore to a uniform powder, then sample and take one third of an ounce that has been pounded in an

iron mortar and passed through a wire gauze sieve of 100 to 120 meshes to the square inch. The sample is stirred into a thin paste with hot water in a porcelain dish or cup. About 2 ounces of strong nitrie acid is then added (out of

hour) the liquid portion is decanted off into another porcelain dish and placed in a water bath. More acid—an ounce or more if re-quired—is poured over the undissolved resi-due, and the dish containing it allowed to remain on the water bath another half hour. The partly evaporated acid solution, first de-canted, is then carefully washed back into the dish containing the sediment with a little hot water, and the liquids allowed to evaporate to complete dryness over the hot-water bath. Over the dry residue ½ ounce of strong sulphuric neid is poured cautiously and the mixture is stirred until fumes are no longer given off. Then I ounce of cold water is tirred in and offer a few minutes. water is stirred in, and after a few minutes standing 2 ounces of hot water are added, the mixture stirred and the suspended matter allowed to settle. The liquid is next filtered through a small piece of good filter paper adjusted in a glass funnel, the filtrate per adjusted in a small clean vessel of porcelain or glass. The residues are shaken up repeatedly with small quantities of clean water, the washings being thrown on the filter, and the filtered liquids allowed to mix with the clear acid copper filtrate. The dish containing the residues, as well as the filter, must also be rinsed with a little water, so that none of the copper liquid may be lost by adhering to them. If these operations have been properly conducted all the copper will be contained in the filtered liquid. The copper is collected in a simple battery on a platinum plate, and the weight of the copper ascertained. From this the quantity per ton can be readily calculated.

A. Landsberg, of Stolberg, near Aix-la Chapelle, has invented a

A NEW CRUCIBLE FOR PRODUCING ZINC, the metal being in the form of pure oxides or mixed with other metallic oxides. Almost universally, at the present day, crucibles for producing zine by reduction and distillation of roasted blende or caland distillation of roasted blende or cal-cined ore, when pure or mixed with other metallic oxides, are made of fire clay, al-though crucibles made of a mixture of graphite and clay have been experimented upon with partial success. Those made of fire-clay are destroyed on the inside by the combination of the silicate of alumina with the materials heated in them forming various silicates. The crucibles made of graphite silicates. The crucibles made of graphite and clay are destroyed externally as the fire burns out the graphite. The new method consists in making the crucible of two layers closely united; the outer layer is composed of fire-clay resisting the heat, and the inner one is made of graphite and clay resisting chemical action. Each is a protective covering for the other. In place of graphite, charcoal, coke or mineral coal may be substituted.

Tempering Steel .- The degree of hardness of steel was for a long time supposed to depend upon the quantity of gas contained in the metal. Margueritte, for instance, in 1856 asserted that carbonic oxide took a very active part in the transformation of iron into steel, and Graham tried to show the metal. hydrogen dissolved in the cold hydrogen dissolved in the cold ingot. This was proved by analyzing the gases which escaped, at Bochum, in this final reaction, and which in two cases had the question was asked by some whether it would be possible to temper steel by expelling the inclosed gases when the material ling the inclosed gases when the material would be possible to temper steel by expelling the inclosed gases when the material ling the l ing the inclosed gases when the material was hot, and preventing their re-entrance by sudden cooling and consequent contraction. Prof. Roberts, who undertook the task of answering this question, heated metal rods and wires in a vacuum by means of an electrical current, and found that by considered in the property of of an electrical current, and found that by rapidly cooling them in a mercury bath they acquired great hardness. Since the operation was performed in a vacuum, gases could not possibly have been present, and the hardness was consequently not due to their action. Heated pieces of metal, immersed only partly in the bath, were found upon inspection to have only those parts hard which had been in direct contact with hard which had been in direct contact with the mercury. A similar experiment had been conducted in 1722 by Réaumur for an exactly similar purpose, the same results having been obtained as in the above trial; the question before mentioned is thus practically answered, and all doubts as to the probable action of gases are set aside.

The manufacture of the sewing needle is being perfected by American skill. Mr. Foutaine, the Superintendent of the National Pin Company, of Detroit, Mich., has invented a machine which automatically takes the steel wira, clips off a piece of any supposed to be, the metal now produced at the gun factories is almost as elastic and docile as wrought iron, and at a very slight sacrifice of its carbonic virtues can be produced in the metal of passing and without the intervention of any hand labor, instead of passing the materials. of any hand labor, instead of passing through the hands of 80 workmen. After leaving the machine, the only work remain-ing is to temper and pack the needles. These two operations, as will be seen above, are but a small portion of the work, requiring but 14 of the 80 hands through which machine is said to be perfect and rapid, and it is therefore little wonder that an entire revolution in the manufacture of needles is anticipated.

> The manufacture of war rockets, which has been attended by many and disastrous accidents, is now conducted at the Royal Arsenal, England, on a new system arranged with a special view to the safety of the operators. The rocket presses stand in brick buildings, each one in a separate chamber, and the workmen remain outside the walls whence, by means of ingenious appliances, they are enabled to fill the tubes and work the presess without fear of personal injuries in the case of an accidental explosion. A simple shed or lean to, lightly constructed of timber, affords shelter to the men, without being of so permanent a character as to resist even a slight explosion, and the men are probably as secure as they would be if working in the open air.

The construction of an electric railway in Ireland has been proposed, and will be car-ried out shortly. Dr. Siemens, of London have cavities here and there in its bulk. It porcelain dish or cup. About 2 ounces of is true that with rolled or forged steel these cavities do not prevent perfectly sound work being produced, though they necessitate being produced, though they necessitate greater care, and extra hammering or and kept surrounded with hot water. When

exceed id., which, when compared with the cost of using horse or steam power (being 11d. and 7d. per mile respectively), besides taking into account the decreased attendance necessary, will offer strong inducements for imitation in other places.

The Stamped Ware Association.-The The Stamped Ware Association.—The dinner of the Stamped Ware Association at St. Louis, mentioned last week, must have been a very charming affair. The menu is altogether uniqus. It is composed of two tin plates, 6 inches in diameter, connected by a hinge. The plates are of the usual nursery pattern, with the alphabet stamped on the edges. The flat portions on both sides are gold bronzed and lettered. The outsides have on the front the words. The outsides have on the front the words—
"Stamped Ware Manufacturers' Association
St. Louis Club, St. Louis, Oct. 13th, 1881."
In a blank space the name of the guest is
painted by hand. The back has the monogram of the association. Inside we find on one surface a gilt panel, on which is inscribed the words "Compliments of the St. Louis Stamping Company," and on the opposite page, if we may so call it, the menu. The ornamental appearance of the menu is enhanced by floral designs, painted by hand in brilliant colors, and the whole thing is about as pretty as anything of the kind could be. We judge from the menu that the dinner was a liberal one, although only the solids are mentioned. What accompanied the several courses in the way of appetizers and stimulants to digestion, is left to the imagina-

Fire from Electricity.-All accounts agree that the recent fire which destroyed Landenburger's woolen mill in Philadel-phia, originated from the electric light. There were no globes used, and the hands state that the carbon points would frequently throw off sparks, which would at times drop on the warp and burn the ends. On Wednes-night it was not working well, at times burning so badly that the operatives on the upper floors could scarcely see. In the second story it was also causing trouble, and Joseph Wilson, the loom boss, procured a new carbon point to replace the one that was sputtering, and it was while he was going to the second floor to make the change that he discovered the fire. This room was used for discovered the fire. This room was used for packing and wrapping the goods, and there was a large quantity either wrapped up or lying about covered with paper. It is believed that a spark from the carbon point dropped upon and set fire to one of the sheets of paper, and the flames were thus communicated to all parts of the room. The fire can be accounted for in no other way, as there was no stove in the room par ges and no was no stove in the room, nor gas, and no occasion for any person to strike a match, as smoking was prohibited.

Tunneling a Volcano,-The rocks constituting for the greater part the island of New Zealand, consist principally of granite, rock containing mica and quarts, and rocks of an apparently carboniferous period, the presence of the latter justifying hopes regarding discoveries of coal veins. Among the chief points of interest, however, the numerous now extinct volcanoes, principally numerous now extinct volcanoes, principally on the peninsula "Bank," take a preminent position. This peninsula was in former times a veritable island, formed by the mountain tops projecting above the surface of the sea. The special structure of one of these volcanoes is now shown by being traversed by a tunnel 2700 meters in length, having been constructed for a railway between Christchurch and Littleton. The suctween Christchurch and Littleton. The successive layers of lava, slag, cinders and gravel are all clearly shown. This is probably the first volcano through which a way has ever passed.

A railroad bridge will, in a short time, he Panifold bridge will, in a short time, be constructed between Bradford and Alton, Pa., which, when finished, will be the highest railroad bridge in the world. It will be built for the Erie Railroad Company, and will span a ravine 305 feet in depth and 225e out in width. will span a ravine 305 feet in depth and 225e feet in width. The material of construction is to be iron, of which about 44,000,000 pounds will be necessary, the cost of the bridge being estimated at \$500,000. The highest bridges in America at the present time are the Niagara Suspension Bridge, 135 feet high; the Portage Bridge, on the Eric Railroad, 261 feet; the Harlem Bridge, 116 feet; and the Louisville Bridge, 66 feet. The feet; and the Louisville Bridge, 60 feet. The use of the new bridge will considerably shorten the distance between New York and Pittsburgh.

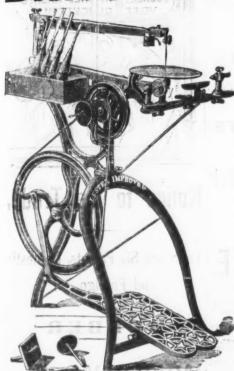
Large iron ore deposits of good quality have been found in Westphalia, Germany, the ore being but little below the surface of the ground. About 150 men are at present engaged in transporting the ore, and a large number of additional workmen are expected to commence operations shortly. Extensive coal veins of from 8 to 14 feet in thickness have also been German capitalists have already commenced preparations for working them. It is proposed to transport the coal by horse or steam power, and the average daily production is to be about 5000 hundredweights

It is reported that the Terre Haute Car Tompany and the Indianapolis Car Works are about to consolidate, the former removing to Indianapolis, the intention of the combined companies being to make the works there one of the largest in the world.

The progress and development of electricity is being encouraged at the Woolwich Arsenal, England, by the substitution of lanterns of an improved pattern for those in use in the Royal Laboratory Department for two years.

The Atchison, Topeka & Santa Fe Railroad Company are preparing to erect shops at Topeka, Kan., to cover four acres of ground, and cost, it is said, \$200,000.

BRACKET SAW



are now a staple article in all Hardware Stores. They make trade lively about Christmas time, when it would otherwise be dull. The demand is ich that any dealer can sell a few he has them in stock. During the past six years a great number of saws have been put on the market, of more or less merit, but at present the demand is almost wholly for the Lester and Rogers Saws. The Lester Saw with all of its attachments sells for \$10.00, and the Rogers Saw for \$3.50. These rates seem low, but we are able to sell at such prices Saws which give entire satisfaction, with no come-back on the Dealer.

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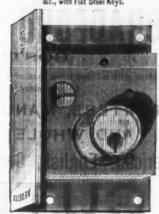


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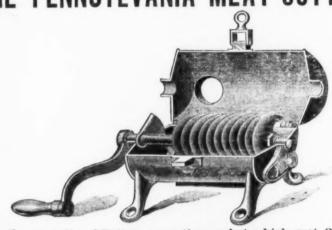


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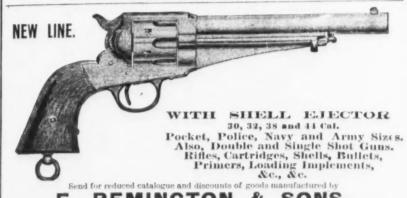
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SCIENTIFIC AND TECHNICAL.

Mr. E. R. Dale, of Queen Victoria street, London, recently exhibited

A NEW MOTOR, forms, and, when required, rotary motion may be produced by various means. The want of a suitable motor for blowing country church organs is much needed, and if found practicable, this invention may prove of use in this direction.

It is reported that Mr. L. W. Hamilton, of Lawrence, Kan., has invented a process for producing what he calls

on a greatly extended scale. The saloon is illuminated by 100 Swan incandescent lamps, while 150 others are distributed among the drawing rooms, smoke rooms, captain's cabins, officers' cabins, state rooms, the engine rooms have six Siemens is no doubt that the treatment these targets did good duty, however; in only one instance did a shot get through; in all others the shots were deflected from their course, and in most captain's cabins, officers' cabins, state rooms, is no doubt that the treatment these targets were subjected to was very severe, but not have been specially designed to harmonize with the decorations of the saloon, and every lamp can be turned on and off with as much case as a gas jet. The two electric machines, which are duplicates, are to be driven by a

PAPER MADE FROM BUFFALO SKIN,

onper is now preferred in many instances to No pains are spared to make the modern war ship invulnerable. A series of

EXPERIMENTS WITH DECK ARMOR, the principle of its action being as follows:
Water is placed in one vessel, and when heated enters another one, and mice versa.
These motors may be made in a variety of forms, and, when required, rotary motion to be of a very interesting character, are of great importance. Up to the present time very little trustworthy information was availgreat importance. Up to the present time very little trustworthy information was avail-able on the subject of the resistance of deck armor when struck obliquely by a projec-tile, although for years past the Admiralty have been building ships which depend for safety to no inconsiderable extent on that protection. Deck armor varies from 1 inch protection. Deck armor varies from 1 inch
to 3 inches in thickness, and is usually
worked in layers of 1 inch in thickness.
The first layer is bolted to the deck beams,
and the other layers are riveted to the first.
Most of the more recent ships are designed
with armor decks at their extremities at or
less they get to line while in ware others. dear the water line, while in some others there are armor decks below the water line is about the color of oak, with a specific gravity of one-fifth more than that of well-seasoned oak.

At the Frankfort Patent and Trade-mark Exhibition there is shown a most ingenious apparatus for THE CONSUMPTION OF FIRE-DAMP by chemical means, which deserves the attention of mining engineers. Hitherto only physical means have been adopted, but the principle of the Korner apparatus cousists in using the decomposing properties of platinum metals in annihilating fire-damp. The inventor is Mr. Guido Korner, of Freiberg, Saxony, and the maker is Mr. L. Frobsen, of Berlin. The invention is described as "an apparatus for consuming fire-damp," and consists of a specialled "ligrain lamp." tended to commence upon a trial target of iron, and, passing upward from a very slow velocity, to have ascertained that velocity hoped that the trials will be accompanied by favorable results, and thus confer a boon upon our colliers in affording them greater protection in their laborious calling, carried on at considerable and constant peril to life and limb.

After a two-years' trial of Siemens' system of electric lighting in the City of Berlin, Messrs. Inman & Co. decided to apply it to th)

Messrs. Inman & Co. decided to apply it to th)

LIGHTING OF THE STEAMSHIP CITY OF ROME on a greatly extended scale. The saloon is lowered by the state of the triangle was crushed in and broken so completely that the desired comparison could not well be made. The targets did good duty, however; in only one instance did a It would have been interesting to have seen the effect upon the targets had live shell been fired against them instead of solid shot, and we trust this will be ascertained upon a

> At the St. Louis Fair the first premium and medal for the best steam pump for low service or general use was awarded to the New Pulsometer Steam Pump Company,

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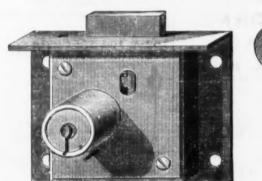
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THE EAGLE LOCK CO...

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will at once commend themselves to the trade.

No. 6101 (Brass) and 6117 (Iron), represented by the above cut, may be locked with out using the key, by simply pressing on the plate in the end of the tube. The other patent, Nos. 6201 and 6217, is a lock similar in appearance, but is so constructed that with a small screw driver any dealer can adjust the lock to an endless variety of keys, or make his whole stock "alike" to fit one key, without opening the lock or affecting its security. These patents have been applied only to drawer and cupboard locks as yet, but will soon be produced in chest and wardrobe locks.

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Lightning Screw Plates. Sets of Taps and Dies from small wire sizes up.

"O" Plate cuts to ½ inch.
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quired. Cuts to ¾ inch.
Drills, Upsetters and Benders.

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We own them all, and shall suppress infringements.

The genuine Cleaner is plainly stamped,

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All of a superior quality.
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by a process which is kept secret. It can be made to any required length and up to 32 inches wide, will hold nails as well as wood, is water-proof, and takes a high polish. It is about the color of oak, with a specific gravity of one fifth more than that of well-

of Berlin. The invention is described as "an apparatus for consuming fire-damp," and consists of a so-called "ligroin lamp," over the burners of which asbestos caps, coated with platinum and palladium, are fixed. These caps are heated up to a red heat, and the apparatus is brought into the mine and hung up in places where fire-damp exists. The caps are never heated up to a white heat, thus avoiding any danger of the fire-damp being ignited by them, even if the gas should suddenly appear in large quantities. The apparatus may, therefore, be safely used wherever fire-damp or an explosive mixture of gases accumulates. It operates quietly, without detonation, the fire-damp being consumed on the surface of the glowing caps, without heating them to any extent, and annihilates the considerable quantity of 35 to 53 cubic feet of explosive gas per minute, or 53,000 to 70,000 cubic feet in 24 hours. The basin containing the oil is filled every 24 hours, the apparatus requiring no further attention during that time. Extensive experiments are to be carried on with the apparatus in the mines of Hernsdorf, Germany, and it is to be time. Extensive experiments are to be carried on with the apparatus in the mines of Hermsdorf, Germany, and it is to be hoped that the trials will be accompanied by favorable results, and thus confer a boon upon our colliers in affording them greater pretetion in their laborious calling carried.

captain's cabins, officers' cabins, state rooms, captain's cabins, officers' cabins, state rooms, alternate current arc lamps of 500 candle power each, while 10 such lamps are placed in the upper and lower steerage. It was the opinion of the late Mr. Inman that the electric light was of more advantage in the emigrant quarter than in any other part of the ship. The fittings of the Swan light have been specially designed to harmonize the word of the special probable that many shots could strike a horizontal deck at so great an angle in an action in fair weather. It would have been interesting to have seen

three-cylinder compressed engine.

The well-known paper mill at Annoway, in the Department Ardéche, France, is now

the product being perfectly transparent, New Pulso although it is impenetrable. This "animal" New York.

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To meet the demands of our own business for a superior quality of work, we have erected a new and improved Rod and Tack Plate Mill, especially designed for the finest and most accurate work. As our own requirements do not utilize our entire capacity, we are prepared to receive and promptly execute orders for rolling a liberal quantity of this class of work. Our location in Boston affords the most favorable facilities to Importers of Ewedish and other fron, for having the material rolled into its required form before shipment.

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and Index to Advertisements.

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Wister L. & R., 30 South Fourth, Philadelphia
Fron Bealers.
Aboel Brothers, 100 South N. Y.
Adams Hugh W. & Co., 56 Pine. N. Y.
Bonneil, Botaford & Co., 50 Pine. N. Y.
Bonneil, Botaford & Co., 50 Pine. N. Y.
Bonneil, Botaford & Co., 50 Pine. N. Y.
Cox Mastice, Ir. & Co., 50 Pine. N. Y.
Cox Justice, Ir. & Co., Philadelphia, Pa.
Egleston Bros & Co., 160 South, N. Y.
Larnshaw Alfred, Philadelphia, Pa.
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Lisaberger S. A., 33 E. 16th, N. Y.
Lisaberger S. A., 33 E. 16th, N. Y.
Lundell Chastaf, S. Kilby, Hoston, Mass.
Middleton W. S., (Swedish), Boston, Mass.
Middleton W. & Co., (Swilliam, N. Y.
Pullman J., Wesley, Philadelphia, P.,
Quincy John W. & Co., (Swilliam, N. Y.
Shimer & Co., Philadelphia, P.
Wallace Wm. H. & Co., Albany and Washington streets, N. Y.
Williamson James & Co., (Swilliam, N. Y.
Hellaire Mall Works, Bellaire, O. Whitney A. B., & Hudson, N. Y. Iron, Pig. Importers of, Bellaire Nail Works, beilaire, O. Clark E. W. & Co., Philadelphia, Pa. Lee James & Co., 72 Pine, N. R. Lundell, Chas. G. (Swedish), Boston, Mass. Williamson James & Co., 69 Wall, N. Y. Williamson James & Co., og Iron. Sheet, Manufacturers of, Hoopes & Morry, 47, W. 14th at, N. Y. Lefterts Marshall & Co., oo Beekman, N. Y. Marshall Iron Co., Newport, Del. Wood W. D. & Co. Pittsburgh, Ps. Iron Stable Fixtures.
Howard & Morse, 45 Fulton, N. V. Jacks. Obl Geo. A. & Co., East Newark, N. J.. Jack Screws. Seeger Mfg. Co., Springfield, Mass. Lamps. Furnace. Taylor & Boggis, Cleveland, O..... Taylor & Boggis, Colored of Color Lead, Pig. U. S. Smelting Works, Philadelphia, Pa. Lemon Squeezers. Onderdonk R., 405 Grand, N. Y.... Obderdons to, to the control of the Disson Henry & Sons. Philadelphia.

Locks and h nebs. "Manyfacturers of.

Bohannan Wilson, Broadway and Kossuth, BrookDirector of the Control of the Control of the Control

Hilbernad & Wolsen, Control of the Control

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Komth & Egge Mg. Co., Bridgeport, Conn.

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Machinery tharnew's Foot Power,
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Naylor & Co., 93 John, N. Y.
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Jackson Iron Co. Cleveland. 2.

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Ox Shore.

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Ratzenstein L. & Co., 3s Desbrosses, N. Y.,

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Ripley & Kimbali, St., Louis, Mo.
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Globe Mfg. Co., Middletown, Conn.
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Harrison C. F., Cuyahoga Falls, O.
Hoopes & Townsend, Philadelphia, Pa.
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Townsend W. P. & Co. Pittaburga, Pa.
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Hake Crisher Co., New Haven, Conn.
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Peck & Snyder, 124 Nassau, N. Y. 12
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Crosby, Sahler & Co., Rondout, N. Y. 12
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Phila. Novelty Mfg. Co., 821 Cherry, Philadelphia... 26 Dudgeon Richard, 2a Columbia, N. Y. 91

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Naylor & Co., 99 John, N. Y. Hiller, Metcalf & Parkin, Pittsburgh,
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Pennsylvania Steel Co., vö S., ath, Phila
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Eanderson Geo. & Co., w Gold. N. Y.
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Bowler & Co., Cheveland, O.
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Perfection Window Cleaner Co. Chicago, Hi. Window Cleaners.
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Hazard Mfg. Co., Wilkesbarre, Pn.
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Leschen A. & Son, St. Louis, Mo.
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Rogers J. F. & Co., 107 Liberty, N. Y.
S. A. Woods Machine Co., yt. Liberty, N. Y.
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Bemis & Call Hdw. & Tool Co., Springfield, Max. 18.
Coes L. & Co., Worcester, Mass.
Coes L. & Co., Worcester, Mass.
Grard Wrench Mfg. Co., Grard, Pa.

NEW YORK WHOLESALE PRICES, October 26, 1881.

| METALS. | |
|---|--|
| IRON.—DUTY Bars, 1 to 1560 # h; Sheet, 1
Mood and Scroll, 14 to 15(c, # h; provided, that
f.he above fron shall pay a less rate of duty th
per cent. Pig, \$7 # ton; Polished Sheet, yc.
Wrought Scrap, \$8 # ton: Cast Scrap, \$5 per
Railroad roc. # 100 hs. Boiler and Plate, 1560. # | Band |
| f. he above from shall pay a less rate of duty the per cent. Pig. \$7 \$\pi\$ ton: Polished Sheet, 3c. | an 35 |
| Hallroad 70c. # 100 Ds. Boiler and Plate, 11/60. # | b. |
| Foundry No. 1X # ton \$25.00 @ | 26.00 |
| ** No. 2x | 21.50 |
| Eglinton. © ton 23 to ⊕ t Carnbroe. © ton 27 to Coltness. © ton 25 to Glengarnock. © ton 25 to Gartherrie. © ton 25 to Langloan. © ton 25 to Eummerlee. E | |
| Gartsherrie. # ton 25.00 @ Langloan # ton 26.00 @ | 25 50 |
| Summerlee # ton 25.00 | |
| Iron | 29.00 |
| Old Rails D H | 32.00 |
| Sar Iron, from Store. —
Common Iron : | |
| % to :in. round and square | 3 70 |
| | 2.98 |
| R rds-96 and 11-10 round and square # b
Bands-1 to 6x-10 to No. 12 # b | 3.10
3.00 |
| Norway Nait Rous 6:4 @ 6 | 5)ac |
| Common R. G | an. |
| NOS. 10 TO 20 # 10 4 5 | , 3 |
| 26 W 10 5540 554 | |
| traivanized, io to so # D 846 | 34c |
| 27 # 15 10 C | 0 1 |
| Patent Planished ** * * * * * * * * * * * * * * * | 160 I |
| Rusala. American Coia Rolled American Coia Rolled By St. 67 CUPPER.—Dust Pig, Bar and Ingot, to: Oid Uper 4c by Manufactured (including all article which Copper is a component of chief value), 45 & | op I |
| valorem. | |
| | 18.6 |
| ft., and over per ib | 180 |
| Braziers Copper 10 oz and 12 oz, \(\psi \) sq. ft | 300 I
320 I
340 I |
| SHEATHING BRAZIERS COFFER, BOLTS, &C. Braziers' Copper, ordinary sizes, 1002, per sq. ft., and over per ib. Braziers' Copper, ordinary sizes, under 16 08. and over 12 08. \$\psi\$ 80. ft. Braziers Copper 100 8 and 12 08., \$\psi\$ 80. ft. \$\psi\$ Braziers Copper 100 8 and 12 08., \$\psi\$ 80. ft. \$\psi\$ Circles less than Lighter than 10 02. \$\psi\$ 80, ft. \$\psi\$ 10. Circles less than Refer and functor \$\psi\$ Circles less than Refer and functor \$\psi\$ 5. Circles \$\psi\$ 10. diameter and \$\psi\$ 10. \$\psi\$ 80. \$\psi\$ 10. \$\psi\$ 80. \$\psi\$ 10. \$\psi\$ 80. \$\psi\$ 10. \$\psi\$ 80. \$ | 31C 1 |
| Locomotive Fire Box Sheets | isc I |
| | |
| No Copper is Sheathing except 14x,0 inches and n
to exceed 34 ox. to the sq. ft. | I |
| 4 1 other size Sheets, 21/4c. per square foot.
For tinning both sides, double the above amount | 6c E |
| O'NEELL'S PATERT PLANISHED COPPER,-Net. | IA |
| | 30 2 |
| 13 0.3. and highter | 50 B |
| (And all sizes not over 20 in. wide. 24x48x30x50. 4 and 16 os. and heavier | |
| | |
| Brown & Sharp's Gauge the Mandard for Metals, O
English Gauge the Mandard for Wire,
BRASS MANUFACTURERS' PRICE LIST.—dis. Nominal. | ta |
| Cash prices for Roll and Sheet Brass. For less qua | n- W |
| tity than 100 Bs. add 30 \(\Phi \) B. ### B. #### Brass. ################################## | MU |
| not wider than 1-1 n. 3
All Nos. to No. 28, inclusive, and widths over 14 to
20 in., inclusive. 3 | Ne Ne |
| ▲ IlNos. to No. 28, inclusive, and widths over 20 to 30 in., inclusive | e No |
| not wider than 1.1 m. All Nos. to No. 26, inclusive, and widths over 14 to 20 in., inclusive. 21 in., inclusive. 31 in. os. to No. 26, inclusive, and widths over 20 to 30 in., inclusive. 32 in. inclusive. 32 in. inclusive. 33 in. inclusive. 34 in Pass thinner than No. 8 is Platers' Brass, at. 45 inclusive. 35 in. inclusive. 36 in Pass thinner than No. 8 is Platers' Brass, at. 45 inclusive. | o Se |
| clusive. All Brass thinner than No. 8 is Platers' Brass, at. 9 Sheets 24746, and all sneets cut to particular sizes and lengths under 30 in., in width wider than 18.3; Frincers' Rules. Sheets water than 30 in. and under 40 in | ro Co |
| Sheets wider than 30 in. and under 40 in | C Gu |
| cular Sheets, in diam. from 4 in. to 14, inclusive.sc | Ke Ke |
| | C Life |
| 4c & h more than High Brass, | 80 |
| Platers' or Gold Metal Sawed 51 Planed or Polished 54 | |
| Metal in width in. to 16 in. to No. 28, inclusive, 10. 3 | c Le |
| metal. in width 2 in to 1 in. thinner than No. 28, 20, 3 | BO BO |
| Advance. | Pu
Bo
Co |
| Metal, inwidth 1 in. to 14 hinner than No. # 1 | Pu Bo |
| advance. Metal, in width 1 in. to 1/4 hinner than No. # # advance. ctal. in width 1/4 in. to 1/4, inclusive, not thinner than No. 28, 20. # M advance. Metal, in width 1/4 in. to 1/4 thinner than No. 28, 50. # | Pu Bo |
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| (Dealers' Selling Pric | |
|---|---------|
| White Shirt Cuttings, No. 1 | 614 @ |
| 11 No. 2 | 6 69 |
| Mill Assorted Whites | 536 GB |
| Unbleached Muslins | 634 66 |
| City Whites, No. 1.
New Canton Flanneis | 436 @ |
| New Canton Flannels | 6 6 |
| New Seconds, light | 374 (4) |
| " dark | 336 (6) |
| No. 2, Whites | 234 68 |
| Cotton Canvas | 4% GB |
| Linen Canvas, No. 1 | 4. (8 |
| Seconds, City No. 1 | 1'4 (8 |
| " No. 2 | 154 69 |
| Colors. per 100 lbs | 75 69 |
| Manita Rope. | 356 66 |
| Tarred | 276 68 |
| Gunny Bagging, No. 1 | 256 (6 |
| No. 2 | 176 (8) |
| Kentucky Bagging | 454 (0) |
| Burlap Bagging, No. 1 | 294 (8 |
| Far Shakings | 276 18 |
| Hemp Twine Stock | 4"858 4 |
| Soft White Shavings, No. 1 | 474 68 |
| White Shavings, No. 2, soft | 334 60 |
| Mixed Shavings, part white | 374 08 |
| ledger and Writing | 314 60 |
| Solid Stock | 374 (0) |
| Book Stock No. 1, light | 334 (0) |
| Old Newspapers | 124 (0 |
| Pure Manilas | 174 (0) |
| Bogus Banilas and Hardwares | 154 (0) |
| Commons | |
| Binders' Board Cuttings | 114 @ |
| traw Board Cuttings | 112 (0) |
| materia warners and | 128 (8) |

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|---|--|---|
| 1 | Paints, Oils, &c. | |
| 1 | n/4677 | |
| | Black Lamp. Coach Painters > > > | × |
| ı | " Ordinary | Ä |
| 1 | beat. | ŭ |
| | Black Lamp. Coach Painters. Pare | ě |
| 1 | Plue Chinese dry | j |
| ı | " Ultramarine | ä |
| ч | Brown, Spanish | ä |
| 1 | Green Chrome | å |
| 1 | " in oil | ä |
| 1 | Paris | 4 |
| 1 | Iron Paint, Bright Red. | å |
| 1 | " Brown * 70 rie | ŝ |
| 1 | Ground in Oil Bright Red 22 2 12 | ļ |
| 1 | " Red m o | à |
| 1 | " Brown # 25 454 | ġ |
| 1 | Mineral Points | e |
| 1 | Orange Mineral | è |
| 1 | Red Lead, American | 4 |
| 1 | in oil asst'd cans, 11c; kegs, 8 | C |
| 1 | " Indian dry 9 @ 120 | ä |
| 1 | Rienna American Kaw | 2 |
| ı | " Burnt | ć |
| I | in oil | 2 |
| İ | Umber, Brint. | ģ |
| 1 | " in oil | ä |
| l | " Raw | 2 |
| l | Vermillion, Chinese | 2 |
| 1 | " English 55 @ 5756 | è |
| l | 4 American Common | 7 |
| l | White Lead, American, pure dry? 98 | ė |
| ı | " in oil 9 6 12 6 10 6 12 6 10 6 12 6 10 6 12 6 10 6 12 6 10 6 10 | |
| ı | Yeliow Ochre, French | ŝ |
| l | ' in oil asst'd cans, rie; kogs, &c | į |
| l | Vellow Chrome 17 6 270 | ļ |
| ł | " in oll | į |
| ŀ | Zine White American No. 1, dry | 2 |
| ŧ | " French (Paris) dry | į |
| I | Yellow Chrome | |
| ı | Linseed, Raw in casks and bits gal, 61 @ 62c Belief | |
| ľ | " Boiled. " " 64 06 650 | į |
| l | Bleached Whate gat. 650 | ١ |
| l | Elephant 68c | ì |
| ı | Signat | į |
| П | Prime Lard95 @ 960 | l |
| 1 | West Virginia | |
| | Drilling | |
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| | Elephant | |
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| Pine Tar, bbls | | | | Ro. |
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| Waste, No. 1 Cop | | | | IO |
| " No. 1 White Machin | · | | | 10 |
| " No. 2 " | | | | 956 |
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| | DOW GL | A86. | | 9 |
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| FRENCH WINI Prices current p Single Thick. — D SIZES. 6 x 8 to 10 x 15. 11 x 14 to 16 x 24. 18 x 22 to 20 x 30. 15 x 35 to 24 x 30. 26 x 38 to 0 fo x 44. 26 x 46 to 30 x 50. 30 x 32 to 30 x 55. | 184.
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| FRENCH WINI Prices current p Single Thick.—D SIKES. 6 x 8 to 10 x 15. 11 x 14 to 16 x 24. 15 x 26 to 20 x 29. 15 x 36 to 24 x 39. 26 x 36 to 30 x 50. 30 x 4 to 30 x 50. 30 x 4 to 30 x 55. 30 x 4 to 30 x 55. | 18t.
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| FRENCH WINI Prices current p Single Thick.—D SIKES. 6 x 8 to 10 x 15. 11 x 14 to 16 x 24. 15 x 26 to 20 x 29. 15 x 36 to 24 x 39. 26 x 36 to 30 x 50. 30 x 4 to 30 x 50. 30 x 4 to 30 x 55. 30 x 4 to 30 x 55. | 18t.
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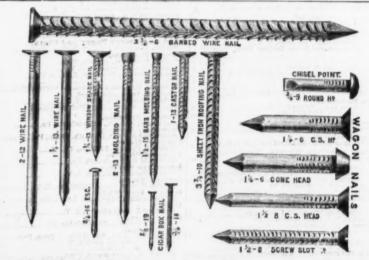
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This Shafting is superior to any in the market, and commends itself to the trade for the following reasons, viz:

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BRASS PAD LOCKS For Railroad Switches, Freight Cars, and the Hard-ware Trade. All sizes, with Brass and Steel Keys, with and without chains.

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Heaviest grade about 25 lbs. per cubic foot. Price, 1 cent per lb.

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Combines every advan-tage possible in an ICE CREEPER. Attaches with a thumb screw; turns over into instep; one size for all. R. P. SCOTT & CO., Manufrs., NEWARK, N.J.

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Horizontal, Vertical and Locomotive Tubular
Boiler, from 3 to 60 H. P., in stock and larger to
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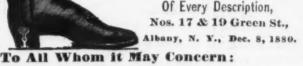
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H. M. BREWSTER, Agent. Brightwood P. O., Mass.

Office of NELSON LYON. Lyon's Patent Metallic BRUSHES Of Every Description,



To-day a decree in my suit against G. T. Fisher & Co., of Detroit, for an infringement of my patent, was made and entered, of which the following is an extract At a session of the Circuit Court of the United States for the Eastern District of Michigan, held at Detrots
at a session of the Circuit Court of the United States for the Eastern District of Michigan, held at Detrots
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GUYON T. FISHER, et al.

GUYON T. FISHER, et al.)

It is ordered, adjudged and decreed, that the act entitled "An act for the relief of Neison Lyon and Jere mish & James," passed by Congress and approved April 1, 1985, &c., is a good, valid and constitutional act.

That the original patent, bearing date July 9, 1872, and numbered 128.87, granted and issued to Joseph Barasioux, Jeremish S. James and Neison Lyon, when corrected by the Acting Commissioner of Patents, as directed by said act, was a good and valid patent.

That the said Joseph Barasioux was the original and first inventor of the improvements in metallic stiffeners for boot and show heels mentioned and described in said letters patent.

That the said Joseph Barasioux was the original and first inventor of the improvements in metallic stiffeners for boots and shows not patent.

That the defendants, G. T. Fisher & Co., and each of reginality patents are affected. Is a good and valid patent; that said Lyon is exclusively passessed of said Letters Futent and the invention thereby secured.

That the defendants, G. T. Fisher & Co., and each of them, have infringed upon the said patents and upon the exclusive rights of said Lyon under the same.

That said Lyon receive of said defendants all the profits. &c., they have made, and in addition thereto all the damage he has suffered by reason of the infringements by the defendants, and also the costs, charges and disbursements in the action.

It is also further ordered, adjudged and decreed, that a perpetual injunction be issued against said defendants, according to the prayer of the said complainant's bill.

You are also hereby holdered and decreed that the perpetual injunction has been issued and served on the defendants.

All questions as to damages and settlements in relation to infringements under my patents must be addressed to and made with my attorney, WILLIAM H. KING in my care at the above address.

NELSON LYON.

SABIN MFG. CO.

MONTPELIER, VT., MANUFACTURERS OF DOUBLE-ACTING SPRING BUTTS.

SABIN'S LEVER DOOR SPRINGS, For heavy doors, BOSS AND CROWN SPRINGS, For light doors. Send for Catalogue. Represented in New York by DAVID HYMES & CO., 93 Thurch St.

C. F. HARRISON, BOILER, BRIDGE & TANK

New York Wholesale Prices, October 26, 1881.

| | | Journ Tilous, O | | De Beque dis to |
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| HARDWARE. A nvils. A figigle Anvils A surjean | Hutts Wrought Brass | Am. Miller Bro, a Cutlery Co | Hand Cuffs and Leg frons. Providence Tool Co. 1 Hand Cuffs, \$15.00 \(\psi \) dox \(\delta \) dis 10 \(\frac{1}{2} \) Tower's | De Beque dis to
Police, Small, \$6.2x; Mcd., \$7.50; Large, \$12.co, di
Convex Reflector. \$2.75 \(\) doz, di
Lawn Mowers.
Pennsylvania, Philadelphta and Excelsior, new |
| 行「ght's | Corbin'sdis 2021 | Aaron Burkinshaw's Pocketdis 25 % | HandlesDoor or Thumb Latches
Nos | |
| Wilkinson's | WILL ACOILS | Per Cellura. dis 20 % Leather. dis 30 % Ranbossed Gilt. dis 20 % Celluloid. dis 20 % Celluloid. dis 20 % Celluloid. dis 20 % Celluloid. | Roggin's Latchesper doz 250@40c net
Bronzed Iror Drop Latches # doz \$0.75 @ 0.85 dis 10 %
Jan'd Store Door Handles—Nuts. \$1.02 Flate \$1.05 | Eureka. Tinned. # doz \$8.00—di
Dunlap's Improved. # doz \$8.100
Sammis'. No. 1. \$7.00' No. 2. \$12.00 # doz : di |
| Augers and Bits. | Loose Pin, no Acorn | Torrey's Rod # doz \$2.10, dts 10 % | Barn Door | Townsend's Patent \$0.00 \(\) doz. dis Jennings "Star" \$3.50 per do Lines.—Lines Fish dis 2 Cotton Chalk \$4.00 \(\) dis 2 dis |
| Liouglass Mfg. Co | " Plated Tipsdis 55&10 | Gem (Coll) | Wrought Chest. dis 6,820 s Surface Chest. dis 5,820 5 Flush Chest. dis 6,820 5 Flush Chest. dis 6,820 6 Flush Chest. dis 6,820 8 Lifting. dis 5,820 8 Soynton's Fat. Loop Saw Handles dis 4,920 8 Boynton's Fat. Loop Saw Handles dis 4,920 8 Hammer an Hatchet. Berns dis 2,920 8 Flush Aw Handles dis 3,920 8 Helcory Firmer Chisel, assorted, \$\frac{1}{2}\$ gross \$\frac{1}{2}\$,50 1 large, \$\frac{1}{2}\$ od 15 | Alternation |
| Humphrevsville Mfg. Co. dis 40 % Ives | * Lt. Narrow | No. 2, mentum, doz 2,00 (25&10 %) No. 3, Small. Star(Coil)—For Cop'd, Nickel-Plated, &c. see list. | "Centennial Saw Handles | Wire Coones Galvanized Locks and Latthes— Cabinet Eagle |
| Shell Mrg. Co.'s C. S. Augers | Inside Blind, Regulardis 45&10 | 8 Barr(OIII - FO' V.Op a. Nickert assett. Sc. See Into. No. 4, ("Snoo Fiy") Screen door size \(\text{dos 82.00} \) (dis No. 5, Screen Door Size. \(\text{dos 82.00} \) (dis No. 6, Medium. \(\text{dos 0.275} \) 30210 \(\text{Soc. 3.82} \) (4.8 2.55) 8 No. 7, Large. \(\text{dos 0.405} \) (3.82 4.82 50) 8 abin's lever. No. 1. 81: 2.81,50: 3, 82: 4.82 50; dis 30 5 | Apple " assorted, " 5.00 dis Socket " assorted, " 5.00 dis socket Framing assorted, 5.00 (6) | " P. & F. Corbin |
| C. S Bits. dis 40 % Jenning's Bits. dis 40 % Patent Sciid Head. dis 30 % | Loose Pill. Wrt | % Rabin's BossNo. 1, \$4.40; 2, \$4.20; 3, \$3.00.018 to %
% Rabin's Crown | Framing assorted, 5.00 @ File, assorted, gross 2.75 25@10 % Auger, assorted, gross 5.00 | Round Key, No. 10 5 |
| " B. Machine dis jos "C. S. Bits" dis jos "C. S. Bits" dis jos "Jenning's Bits" dis jos "Patent Sciid Head dis jos "Levus" Patent Singte Twist dis jos "Levus" Patent Singte Twist dis jos "Gassell Jennings" Auger, Dowel, Machine-Dowel and Hand-Rait litts dis jos "Gasjos S. Russell Jennings" da yugers dis jos "Gasjos S. Russell Jennings" Car and Machine Bits, Soring "Russell Jennings" Car and Machine Bits, Soring dis jos "Gasjos S. Russell Jennings" Car and Machine Bits, Soring "Gasjos "Gasj | Spring Hinges Spring Butt Co., Jap'd dis as American Spiral Spring Butts Japanned dis 26 | \$ Cowell'sNo. 1, \$18.00; No. 2, \$15.00 \(\) doz, dls 50 \(\) Rubher, complete\(\) doz \(\) doz \(\) dis 10 \(\) Hercules | Inrge, 7.00 Patent Auger, Ives' 7.00 Douglass' F set \$1.25, net 8wan's F set \$1, net | Yale Lock Co. Flat key. d "Shepardson" or "U. S." di "Fetter" or "American" dis |
| Imitation Jenning's Bits | Union Spiral Spring, Japanneddis 25 | Drawing Knives. | Hangers. Barn Door, old parterns | F. Mane's 'Extension Cylinder''\$10.50 \(\) do DOOR LOCKS, &0 Brantord |
| New 186 Clark's, small, \$10 l'ge Mis so \$ Expansive Bits, Clark's, small, \$10 l'ge New System Syst | Union Spring Hinge Co.'s | Nobles Mfg. Co dis 15 % Bradley 6 dis 25 % Adjustable Handle dis 20 % Witherby Tool Co dis 56 % 10 % | New England dis cocz to \$ Challenge dis yo \$ Climax (Anti-Friction) dis \$ 5 \$ Sterling Improved (Anti-Friction) dis \$ 6 \$ \$ Cheritree dis coct o \$ Elder's discoct o \$ Elder's discoct o \$ Cheritree | Norwich P. & F. Corbin List of June 10, with ch |
| Hollow Augers Ives | GHER DULLE, FOR MCIAL | Douglass | Kidder's discoct o U.S. 4in., \$12; 5in., \$15; discoct o U.S. dis., \$12; 5in., \$15; discoct o the "Bose" dis. 50ct o \$ | Mallory. Wheeler & Co 19, 1881, dis 45&2 % |
| "French, Swift & Co (dis 16210 & Constant) "Bonnev's Adjust * doz & dis 16210 & Stearm's Adjust * doz & dis 26210 * Stearm's Adjust * doz & dis 26210 * Constant * Con | " Shepaid's "Double Locking" Nos. 1 & s | Report P. S & W | Henshaw'sList of 1\(\) changed to 14.00, dis 5\(\) co 5 Judd's | renton Lock Co Padlocks - stassell & Erwin |
| Cimlet Rits \$7.50 W gross, dis 45 C | Nicholsondis 45&10 | C DICEBL, WILMOID | Sargent's | " Conestogs |
| Diamond. ** dos &t. rodis zet rot* Bee". Bee". Sheperdsou"s. dis zet rot* Ct. Valiev hig. Co. dis zet rot* Hartwell's. dis oct rot* Douglass . dis oct rot* Lyes . dis oct rot* | " Sarrent's No. 1. 3 dis 66% & 2&10 " No. 12 dis 70% to " Reading's Gravity dis 66% & 1. 60% & 1. | Ratchet Merrill's dis 10 % | Covert | Lustro4-oz. bottles, per doz. \$2 ; per gre. \$1 |
| 1 1 1 1 1 1 1 1 1 1 | Bow Fine. Botchkies'. dis 25, Humsson, Beckley & Co. 3, dis 50, dis 60, dis 6 | Whitney's Hand Drilldis se \$ | Isalah Blood | Mailets.—Hickory dis to Lignumvite. dis to Penfield Block Co., Lig., Apple & Hickory. dis to Meat Cutters. |
| Awi Hafts. | Butchers' Cleavers. | Drift Chucks.—Morse's Beach Patent dis 30 % | Hunt's. dis 2 &to \$ Shingling, Nos. 1 2 3. \$\pi\$ dos \$\pi\$,25 \$\$5.00 \$8.75\$ Claw, Nos. 1 2 3. \$\pi\$ dos \$\pi\$,75 \$8.50 \$9.25\$ Lathing, Nos. 1 2 3. \$\pi\$ dot 7,50 8.25 \$0.00 | Penfield Block Co., Lig., Apple & Hickorydk Meat Cutters. Dixon's (P. S. & W.) Nos. 1 # doz\$14.00 Miles' Challenge |
| ### 3.50 ### dos—dis cokto 5 Fatent Sewing, Short ### \$1.60 ## dos—dis cokto 5 ### Long ### \$1.60 ## dos—dis cokto 5 #### Peg Plain Top ### \$1.60 ## gross—dis cokto 5 #### Leather Top ### 1.00 ### dis cokto 5 #### dis cokto 5 ################################### | Humason & Beckley Mfg. &co | Egg Heaters. # dos. \$2.50 dis 2 % Acme \$20 per gross, dis 33% \$10 % | Lathing, Nos. 1 2 3. \$\psi\$ dox \$7.50 8.2c 0.00 \$\text{Rurd's}\$. \$\text{diags}\$ do \$\text{8}\$ to \$\text{8}\$ 0.00 \$\text{Claw}\$, Nos. 1 2 3. \$\psi\$ dox \$\text{gox}\$ 0.00 \$\text{Verkes & Plumb.}\$. \$dis \$0.00 \$\text{dis \$0.0 | Each \$2.00 4.00 5.00 11.00 13.00 36.00 —di |
| Patent Feg Film 105 | Can Openers. Comet # doz \$3.00. dis 25 | Standard \$24 per gross, dis 33% \$25 | Yerkes & Plumb | Hales'Nos. 11 12 13 14 15 16 17 17 17 17 17 17 17 17 17 17 17 17 17 |
| Awis, Sewing, Common. Figures 2.45—dis 2c&10 % Shouldered Peg. Figures .3,—dis 2c&10 % Shouldered Brad. Figures \$2.70—dis 2c&10 % Shouldered Brad. Figures \$2.70—dis 2c&10 % | Americau # gross \$7.40. dis 10 Duplex # doz 240. dis 15@20 Lyman's # doz \$3.75. dis 20 | Elevator Buckets. Mill E. Buckets, light, 3½ to 10 in. (Duc's Improved) it is 10 \$15.00 & \$44.00, dis. 10 \$ Mill E. Buckets, heavy, 5 to 10 inches (Duc's Improved) | Simmon 8 | Each\$50.00 75.00 80.00 225.00 400.00—dli American |
| Handled Brad | NO 4, French | # dos \$c.50@ \$10.20 dis. 10 % # dos \$c.50@ \$10.20 dis. 10 % # dos \$c.50@ \$20.00.dis. 10 % # dos \$c.50@ \$20.00.dis. 10 % # dos \$c.50@ \$20.00.dis. 10 % | Claw, Nes. 123. # 008 9,50 6,00 65.0 86.0 10.00 Lathing, Nos. 123. # 008 6.00 6.00 6.00 8.00 Broad, Nos. 123. # 402 6.00 10.00 12.00 14.00 Nos. 65.76 William 10.00 10.0 | Gem |
| Handled Scratch | Star | Emery and Emery Faper. \$\pi\$ 6c Regular numbers. \$\pi\$ 5 6c \$\pi\$ clur and \$\pi\$ = \$\pi\$ clur and \$\pi\$ clur and \$\pi\$ = \$\pi\$ clur and \$\pi\$ clur and \$\pi\$ = \$\pi\$ clur and \$\pi\$ = \$\pi\$ clur and \$ | Collins Nos. 56 78 W dox 16.00 18.00 20.00 22.00 Collins Shingling, Nos. 1 2 3 W dox 50.00 25.00 F6.00 Claw Nos. 1 2 3 W dox 5.00 7.00 7.00 Lathing, Nos. 1 2 3 W dox 6.00 6.50 7.00 Hay Kustwas | Gen \$25 per doz., dis Silver & Deming dis doz dis doz dis doz do |
| ** No. 2, 4.80 dis 30&10 \$ ** No. 3, 7.80 dis 30&10 \$ ** No. 3, 7.80 dis 30&10 \$ ** Axes. ** Ingle Bit 4\6 to 5\6 and under | Caps—Percusaton, ¥ 1000. U. M. C., F. C. trimmed | Large size, \$16; Medium, \$10.50 per ream; dle 15 % Enameled and Tinned Ware. Kettles | Wadsworth s | Am. (3d quality) per gross, 1 blade, \$7: 2 blades, 5 blades, \$1: 5 blades, \$1: 5 blades, \$1: 5 blades, \$1: 6 blade |
| A xr** # Ingie Bit 4/c to 4/c and under. # dos \$10.co net 4/c to 6 and over. # dos \$10.co net Beveled. Double Bit, 4/c to 4/c and under. # dos \$10.co net 4/c o 4/c and under. # dos \$20.co net 4/c o 4/c and over. # dos \$20.co net 6/c and 0 over. ## dos \$20.co net 6/c and 0 over. ## dos \$20.co net 6/c and 0 over. ### dos \$20.co net 6/c and 0 over. ################################### | G. D. & S. B 34c, dis 4 5 | Tinned Sauce Pans. dis 30 % Kecutcheon Pins. dis 50 % Brass. dis 50 % | | |
| Axles-Standard list dis 45 % | Double Waterprot, in | Door LockSame discounts as Door Locks | Gate, Clark's Nts. 1, 2, 3 | Molasses Gates. dis Stenniss Pattern. dis Stenniss Pattern. dis Stenniss Pattern. dis Stenniss dis |
| Sprengle's Patent, per doz. \$18dis 40 % | CartridgesRim dis 70&10 1 | Paucets. dis 40 % | Rolled Plate die 6ckto 6 | Lincolu's Pattern. dis 500 Weed's dis 500 |
| All Spring Balance | Central Fire | Historia dis 40 % | Rolled Raised | Boss, No. 1 2 3 4 4 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 |
| at White Metal dis 60 # | Wool | Metallic Kny Leather Lined | Heavy Welded Hook 14 in. 4 up. 5.25 100 % dis 10 % | Nuts and Washers.—(In lots less than for add 3/c to list.) square Nuts |
| Gong, Abbe'sdis 20210 % | Casters. | Cork Lined | L 16 th. 120 ! | Table (Humason & Backley Mer. Co.) |
| " Cone's, Gis to f | Bed | Felloe Plates F h roc, dis 20 % | G | Turner & Seymour Mfg. Codis Oakum. |
| Taylor's Bronze or Plated Lever | Humason, Beckiey & Co.'sdis 65&kro S
Sargent's | E. M. Poynton's | Scovili Pattern, Handleddis 25 \$ | NAVV 3 |
| Call | Trace, 636-12-2. | E. M. Poynton's | Winsted & Lane, Planters | Ollers.—Zinc and Tin. dis Brass and Copper. P dos Sc.oc, dis Maileable (Hammer's) Zinc dis Maileable (Hammer's) Zinc dis Olmstead's, Tin and Zinc Brass dis Broughton's, Zinc dis Brass dis Ox Bails dis 538 |
| Westerndis 20&10 % | "COLL. Glis cozio S
Covert Haiter, Hitching and Breast dia 3c8
Oneida Haiter Chain cold list). dia 40 S
Galvanirea Pump Chain # 5 b/sc net
Jacg Chain, Iron. dia 60 zio S
Brass. dia 60 zio S | Moss & Gamble | ### ### ### ########################## | Olmstead's, Tin and Zinc. dis Brass and Copper dis Broughton's, Zinc. dis Brass dis |
| \$17.00 10.00 0.00 8.00 0.00 5.00 3.50 2.50 5.00, 5 | Chalk. | New American | Cotton, Patented (N. Y. Mallet & Handle Wks), dis 32% Cotton (Humason & Beckley Mfz. Co.) | Pencils. Paber's Carpenters' |
| Beliaws. Elacksmiths', Common | White # gross foe net Red # gross ion net Blue # gross ion net White Crayons # gross rep net | Enox. 44-inch Rolls | Cotton, Fatentee (N. Y. Mailet & Handle Wish, dis 35 Cotton (Humason & Becklev Mfr. Co.) | Pencils, Faber's Carpenters'. High list, dis 402: Round Gilt Fgross \$5.35 Dixon's Lead. Fgross 4.50 Lumber Fgross 50 Dixon's Carpenters'. Gis 50 & 50 |
| Moulders dis 25 % light Bellows dis 25 % ligh | Chibella. | Eagle, 314-inch Roll \$2.15, dis 25 \$ | darness. Reading listdis 40&10 \$ 1 | N. Y. Beiting and Packing Codis: |
| Bit Holders. Extension, Barver's | Witnerby Tool Co dis 652 10 % | No. 2 s-inch Roll | Picture Hooks, Brown's Pat. Solid Brass, \$4 per grossdis 25 4 | Brass Head, Sargent's List |
| D'Egonai . W dos \$15.00—dis 40 \$ D'Egonai . W dos \$25.00—dis 40 \$ Angular . W dos \$25.00—dis 40 \$ Angular . W dos \$25.00—dis 40 \$ Blind Adjusters .—Domestic W dos \$100, dis 15 | ### Firmers Crossman dis 6.85 8 1 | American, 5 in., \$3; 6 in., \$3.40; 7 in., \$4.50 each, dis 25 % Domestic Fluter | Yought Stables and Rooms and Sepies, 0.18 70% | Procedum Hess, cargent s 1 dis ox. |
| Excelsior # uos \$10.00.—dis \$0\$:10\$2 % Hind Fasteners. But Frest Brown of the first Bro | " Corner dis oskio | Shepard Hand Fluter | Volimetree—Patent dis 4c&;o x Rooks and Eyes—Malleable iron. dis 6c&10 x Brass dis 6c&20 5 | Finiting Machines. # dos 7sc Finiting Machines. # dos \$1.00, , stor Plating Machine. each \$15.00, dis 2 frown Plating Machines. dis 2 fin. \$0.00. lolin.\$5.00 each |
| old pattern # gross \$3.50 net Washburn's Patent # gross \$10.40 net derriman's | Fanged Firmers extra | No. 70, \$12.00; No. 66, \$8.00net Clark's Hand Fluter | linton, " 230 210 200 190 180 dis 20 % | Planes and Plane Irons. |
| Barbed, % in. and larger | iron, Providence Tool Co.'s, Wrt. Irondis 25 % "Adjustable, Gray'sdis 20 % "Adjustable, Gray'sdis 20 % "Adjustable, Gray'sdis 20 % "Bnow'sdis 20 % | Firting Sciences | utnam, "310 280 260 250 240 290dls 104.10 5 ational, "250 230 210 200 190 160dls 10 5 1 dlobe, "260 250 230 220 210 200dls 10 5 1 llobe, "260 250 230 220 210 200dls 10 5 1 | Senon, First Quality |
| offerential Pulley Blocksdis 20 \$ mileld Block Co., Rope and Iron Strap'ddis 40 \$ | ti ti Otanuna) dia safera f | Forks. Hav. Manure and Spt-ling dis so \$ | | |
| Stauley R. & L. Co., Rope and Iron Strap'ddis 40&10 % | Oabinet, Sargent's dis poste & Carriage Makers', Sargent's dis October Cora and Tape (T. & S. Miz. Co.). dis 90 & Clips, Axie. Norway or Hest. dis 40 & 5 & 6 & 6 & 6 & 6 & 6 & 6 & 6 & 6 & 6 | Hay, Manure and Sptding | Herse Shoes. | Auburn Tool Co.'s |
| ast Irou Chain (Sargent's list) dis toot 5 ves' Pat. Door Bolts. dis 60 5 Vrought Barrel dis 60 5 | Ruperiordis 65&5 \$ | | | Ohio Tool Co |
| Square. disconstantey's list discontrol of Brass Knob. ". dis 20210 \$ | Cockeyesdis 35&10 % Cocks, Brass. sacking | ### Pans. Burnished, list as foliows | ational # dor \$5.34 ans 20 m ovelty Ice Breakers. # doz \$6.25 dis 20 f. H | Satton's Patent. dis 334 [all's Pat. Compound Lever Cutting Nippers No. 2; 5 in. \$20; No. 4, 7 ln. \$30 % doz. dis 45 |
| Stank Flush, Sargent S. dis 5c& 108779 \$ B. K. Flush, Com'n. Stanley's | Nove dis 40% d | "Acme"dis 40&10% | 700d Head Picks, Sargent's 7 doz 81.60. dis40&ti. 5 U
on doz 1.24. dis40&ti. 5 E
se Mallets Pick in Head | the Dillows and Minnessee to the second second |
| " Philadelphia, new list,dis 6c&s 6 Se | Goerd and Box | Marking Stanley | te Axes, Small, Cast or Malicable. \$ dos 1.20 dls 10 % fichen ice Tongs. \$ doz 2.26 net ombination ice Tools. \$ dos \$200 net | ureas and Appers dis 2 ussell's Parallel dis 2 S. & W. Cast Steel dis 3 "Tinners' Cutting Nippers dis 1 Plumbs and Levels. |
| nion Carriage | The "Swift" (Lane Bros.) | Gimiets- Nail and Spike | Brass, 7 to 13 inches inclusive # 2 302 net | isston's |
| B. B. & W., new list | er doz \$15.00dis 30 %
Compasses, Dividers, &c. | "Diamond Gimiets | mos! Dutcher Wnives | nabir s Fatent Adjustable dis occidents of the control of the cont |
| | ompasses | " Ives" dis 50 % " Douglass' sits 405 Mr. | oran's Shoe and Bread Knives | avis' Inclinometers |
| tiorax discos | " Call's Pat. Inside dis 30 % | Tinned and Enameled | Knebs. Viriage (Jap'd Soc. # gross) | letcher Fost Hole Augers & dos 36.00, dis z
aughan's Post Hole—
6 in. \$23.60; 7, 8 and 9 in. \$25 per dosdis 20& 10
ureka Diggers & doz. \$40.00 |
| nings & Co., no Augurs. 550 6.75 dis 40 % | Coopers' Tools. | Reading Hardware Co., new list | Por Jap'd Same discounts as Door Locks. Di | Pruning Hooks and Shears. |
| Boxes. Br. Braces. Br. Braces. Cl. C. | radiey's | U. M. O. B. E. 11 up | cture (T. & S. Mfg. Co.)dis 50&10% | . Pruning Hook. Per doz \$19.00, dis 20 S Lee & Co.'s Pruner. dis 20 runing Shears \$4 dos \$5.50@\$6. |
| (11800 Mfg. Co | Corn Kuives and Cutters.—Bradley'sdis 10 % adsworth's | P. E. 11 up | emacite Picture | ot House and Tackiedis 65&10 p'd Screwdis 65&10 |
| whoma Imped | ast Steel # D Sign on Steel Points # D Sign on Steel Points # D Oige Clurling Irons, &c. # D Oige Clurling Irons, &c. | Halters. dis 50% Covert's Pat. Rope. dis 50% Horse and Cattle Ties, Covert's. dis 50% | Address | rass screw |
| fan v. dis 604 to 4 | Curry Comba. | Cheney's | | |
| Bright Wire Goods list of Dec. 14, 879, dis 6c&10 4 all Hings.—Union Nut Co | otenkins Noveitynew list, July, 1880, dis 25 g
Excir. Supr. Champion | Humason & Beckley dis 50 % Me
Verree dis 5 % Me
Magnetic Tack, Nos. 1, 2, 3, \$1.25, 1.50 and 1.75.dis 25&10 % Hu | ail City No. 1, per dos. \$10; No. 2, \$6, 0, ne# eteor. No. 1, per dos. \$0; No. 2, \$6, 0, ne# beteor. No. 1, per dos. \$5,50; No. 2, \$6,50, net beteor. No. 2, per dos. \$5,50; No. 2, \$6,50, net beteor. No. 2, per dos. \$1,75; dis todro \$5 and y's Patents dis todro \$5 and y's Patents dis todro \$6 and y's Paten | mis & Call Co,'s Cast Steel Drive |
| rgent's discondence ku itenkiss discondence discondenc | Curtain Pins,—Silvered Glass | Variage & Roses & Bright & Gla 24 & Bright & Gla 24 & Bright & Gla 25 & Bright & Gla 25 & Bright & Glas 25 & Bright & Grand | ina dis loca s Be | mis & Call Co.'s Spring and Check |
| | | | | |

Importers of

| October 27, 1881. | |
|---|---|
| Rall. Ridding Door Wrought Brass \$ \$ 440 dis 30 in 100 de. dis 100 for 100 de. dis 100 de. di | Payne Pettebone & Son, new list |
| Par DoorInch | Rowland's dis 40% dis |
| Per 100 feet\$1.10 Hed. Large. 3.30—ne | Shevels and Tengs. Iron and Brass Head, M. & E. list dir 50% 10& Foliahed Steel |
| J. R. Torrey Raser Codis 15 3 Raser Strass. Gauge Emerson. dis 5c @ 6c 5 | Slutes |
| Hadger's Emerson. dis 6 6 5 1 Hadger's (not Emerson) dis 23/25 1 Evans dis 23/25 1 Evans dis 20/25 2 | Spoke Mhaves. Defiance Metallic dis zoke from dis yoke wood dis yoke hallev's (Stanley R & L. Co.) new list. dis yoke Steams dis yoke Steams dis yoke the spoke from dis yoke the spoke from the spoke f |
| J. R. Torroy Rates Co | Steams' |
| Saunder's | Speile Trimmers. ## doz \$10.00 dis 40% |
| #11vets. ron and Tinned. In bulk, list of Mav 2: Copper Rivets and Burs. Sos., " 8 9 10 11 12 13 14 14 45 50 80 80 80 80 80 80 80 80 80 80 80 80 80 | Bookins |
| Nos., " 8 9 10 11 12 13 14 15 55
10 10 .490 500 520 540 550 580 500 550 70 45
EUT'8 | 6 Riveted Table and Tea |
| Hivet Setsdis 40 5 | Hall & Elton. dis 40% 5% Holmes, Booth & Haydens. dis 40% 5% German Nilvon |
| Stair, Brass. dis 25 Stair, Black Wainut dis 40 Stair, Amor can Patent dis 20 Stair. | Cast Steel, Sil. Piated |
| Reflers Eara Door, Sargent's list dis 60&10&10; Acuse (Anti-Friction) dis 50 & dis 5 | Byoons. Basting dis foctrock: Riveted Table and Tea dis v Solid Table and Tea dis v Solid Table and Tea dis v Solid Table and Tea dis v Britannia dis foce Rece & barron dis sock & Hall & Elton dis sock & Holmes, Boots & Haydons dis sock & German Silver dis sock & German Silver dis sock & German Silver dis sock & Tir (F. S. & W.) Tables dis 33 Tir (F. S. & W.) Tables \$1.00 gross, n Tin Cowles Hdw. Co.) \$2.00 gross, n Stocks and Dies dis 53 Lightning "Screw Plate dis 10 |
| #antis | "Lightning "Screw Platedis id |
| Tar'd Rope Mand s-16 Inch W D 17 C | Signe Hindostan No. 1, 6 c Axe, 8c dis 20&tr Hindostan Hacker Stone # gross \$12.00 dis 10 Hindostan Hacker Stone # gross \$12.00 dis 10 Rand Stone # b oc dis 33\square \$1 Wassita Stone No 1, 8 \$1 Arkansas Stone No 1, 1 to 6 in b # \$1.35 m Arkansas Stone No 1, 5 to 9 in b # \$2.00 m Turkey Oil Stone (Chase) 4 to 6 in, \$1.00 m Slips \$2.50 # b dis 10 Lak Superior (Chase) # b 20c, dis 10 & Grin istones, Family, Loring* # 5 4c, dis 10 & St ve Polishs dis 10 St ve Polishs dis 10 St ve Polishs |
| * Hay Rope. | ** Slips No 2. F 15 15 4c n ** Slips No 1. F 15 4c n Arkansas Stone No 1. 4 to 6 in B 2 8t as n |
| Hay Rope | Turkey Oil Stone (Chase) |
| Hay tens. Railes. Capplin's Standard. Stanter Boxwood. Ivory. dis fo&10 % dis fo&10 % dis fo&10 % | Lak: Superior (Chase). \$\pi\$ 20c, dis 10k: Slips \pi \pi \pi \pi 45c, dis 10k: Grin istones. Family, Loring's \pi 45c, dis 10k: dis 10 |
| Casi From 1 to 1c lbs | St.ve Pollsh J.so h Dixon's P gross \$6.00 dis ro Gem P gross \$6.00 dis ro Gem P gross \$6.00 dis ro Gem P gross \$6.00 dis ro Mir or P gross \$6.00 dis ro R.tbv P gross \$7.50 h Rising Sun P gross \$7.50 h Dixon's Plumbage P gross \$7.50 h P gross |
| Tailors' \$\psi \text{ dos \$\psi \text{ koc net}\$}\$ Gleason's Shield and Toilet. \text{ dis \$25, \$\psi\$} Mrs. Pott's Irons, Double Pointed. \text{ dis \$40, \$\psi\$} dls 40 \$\psi\$ | Grad Medai # gross \$0.00, dis 25
"Mir or" # gross \$0.00, dis 25
Ribw # gross \$3.75, in |
| Mrs. Pott's Irons, Square Back | Dixon's Plumbage. # gross \$4.75, in Dixon's Plumbage. # 2 8c. in |
| Buder & Adamson's Flint, co to 14 84.75 Fream | Steel |
| ### Stand Paper. Mand Paper. Mand Paper. | Steel |
| Bargos Fint, same list as B & A | Tacks, Brads, &c.
List of April 2, 1889
Tinned Sweder Tacks |
| Bash Cord | Tinned American " dis 60 % Swedes Tacks, all kinds dis 40 % Copper Tacks and Nation |
| Patent | Swedes Hungarian Nails |
| Barties Flint, same list as B & A. | Finishing Nalis |
| Clark's, No. 1, \$10.40; No. 2, \$8.00 per grossdis 33\5% | Winterbottom's Try and Mitre dis 20210 [Tacks, Hrads, & C. List of April 2, 1850 Tinned Swedes Tacks dis 0 f Tinned American "dis 60 g Swedes Tacks, all kinds dis 90 g Swedes Tacks, all kinds dis 90 g Swedes Hungarian Nails dis 335 g Gopper Tacks and Nails dis 335 g Gimp and Lace Tacks. dis 335 g Finishing Nails dis 93 g Trunk and Clout Nails dis 93 g Trunk and Clout Nails dis 93 g Basket Nails dis 93 g Basket Nails dis 93 g Basket Nails dis 93 g Common and Patent Brads dis 93 g Basket Nails dis 93 g Brush Tacks dis 93 g Cligar Box Nails dis 93 g Double Pointed Tacks dis 93 g Tas B erer |
| Fercuson s dis 25 Mammond's Window Springs dis 25 Mammond's Window Springs. No. 1, \$10.00; \$1 gross dis 15 Northup Window Springs. No. 1, \$10.00; \$1 gross dis 15 The Percect, Clark & Smith, Flain Jap'd \$1 gross dis 25 Mindows and Smith, Flain Jap'd \$1 gross dis 25 Mindows and Smith, Flain Jap'd \$1 gross dis 25 Mindows and Mindows a | American Cut Tacks |
| " Por Knob Jap'd. # gro 14.00 net " "Nickel-Plated # gro 27.00 net " Universal ' | Tap B erer
Common and king. |
| Mash Weights.—Sould Eyes, in 500 B lots | Tab B erer Common and Ring |
| and over. # # sqc net #nusnge #stuffers or Filters. Miles. # dos, No. 15; No. 0, \$21, dis 30 5 Perry. 04250 6 each \$30.00, dis 20 5 Fraw Outbook 6 Co | Tapes. Mensuring. American. dis 20 Spring Tapes. dis 25\$to |
| Fraw Cutton 4. Fnterprise Mfg. Co | Thermometers. Tin Case |
| Disston's Circular | Enterprise Mrs. Co. (Champion) |
| " Cross Cut. dis 10 % " Hand. Panel. Rip. &c. dis 20 % Boynton's Lightning. Cross Cuts, new list. dis 20 % | Tobacce Cutters. Enterprise Mfz. Co. (Champion) |
| Billet Webs, 30 in | Machines (P. f. & W.)list add 20 5 |
| Wheeler & Ciemson Mrg. Co.'s Hand | Transom Lifters. Wollensak's Patent |
| ###################################### | Excelsior dis 50%1.62 5 Traps Game, Newhouse dis 20% |
| White, Vermont | Transem Lifters. dis 35 |
| Saw Rods | Hound Wire \$\psi\$ dos \$1.50, dis 10.9 Cage \$\psi\$ 0.02 \$2.50, dis 10.9 Catch-em-alive \$\psi\$ doz \$2.50, dis 10.9 |
| Boynton's Patent & Cut, per dos 3, co and 3, co dis 10 % stillman's Genuine. \$ dos 3, co and 3, co dis 10 % stillman's Genuine. \$ dos 3, co and 3, co dis 10 % of 8, co dis 10 % of 8, co dis 20 % of 8 % of | Traweis. Lothrobs Brick and Plastering |
| Common Lever | Treweis. Lothrous Brick and Plastering. dis 2c. Reed's Brick and Plastering. dis 1c. Disston's Brick and Plastering. dis 1c. Disston's Brick and Plastering. dis 2c. Peace's Plastering. dis 2c. Peace's Plastering. dis 2c. Rose's Brick. dis 1c. Brades Brick. dis 1c. Brades Brick. dis 2c. Garden Brick. dis 2c. Garden Brick and Plastering. dis 2c. Garden Brick. dis 2c. Garden Brick. dis 2c. Triers. dissection dissection dissection. |
| Hammer, Hotchkiss. Bemis & Cali Co.'s New Pat. dis 302 c S Bemis & Cali Co.'s Lever & Spring nammer.dis 302 c S | Rose's Brick dis 15 g Brades' Brick dis 20 g Worrall's Brick and Plastering dis 20 g |
| Man Med Man | Triors. Butter and Choose |
| Hart's Patent Lever | Butter and Cheese. dis 202 Visco. Crown" (A. H. Hildick) 4050 no. 5, 10 no. |
| Henles. Hatch, Counter, No. 171 | Wilkinson's 15366 |
| Hatch.Counter, No. 171. P dos 216. dls 30210 S | Howard's dis socios Merrill's dis socios Bargent's dis 602.0 \$ |
| Forsyth Scale Co. dis 25 g
HOWE'S das 20de 5
Chatilion's Grocers' dis 40 5 | Trenton dis 30 % |
| Family Universal dis 50 \$ Favorite dis 50 \$ | Prentiss. dis 25 % Simpson's Adjustabledis 25 % |
| Scale Beams, Chatillon's list. dis 20 % Sargent's list. dis 60 % 10 % | Baw Filers, Bonney's. \$\tilde{\phi}\ \ \text{ dos \$24.00, \ \ \text{ dis 20.820\$} \\ \text{ dis \$2.820\$} \\ \text{ Hopkins'} \ \ \text{ \$\text{ dos \$xy\$} \\ \text{ \$xy\$} \text{ \$\text{ dis \$xy\$} \\ \text{ dis \$xy\$} \\ \text{ \$\text{ dis \$xy\$} \\ \text{ dis \$xy\$} \\ \text{ \$\text{ dis \$xy\$} \\ \text{ \$\text{ dis \$xy\$} \\ \text{ dis \$xy\$} \\ \text{ \$\text{ dis \$xy\$} \\ \text{ dis \$xy\$} \\ \text{ \$\text{ dis \$xy\$} \\ \text{ dis \$xy\$} \\ \text{ dis \$xy\$} \\ \text{ \$\text{ dis \$xy\$} \\ \text{ \$\text{ dis \$xy\$} \\ \text{ \$\text{ dis \$xy\$} \\ \text{ dis \$xy\$} \\ \text{ \$\text{ \$\text{ \$\text{ dis \$xy\$} \\ \$\text{ \$ |
| McraBers. Adjustable Box Scraper (S. R. & L. Co.), \$5. 50. dis 202 10 % Box, 1 Handle | Reading dis 40&10 % Lowell Hand Vises dis 20 % Richardson's Vise and Anvil dis 25 % |
| Mcrapers | Washer Cutters ♥ dos 812.00 dls 25, 5 Johnson's ♥ dos 812.00 dls 33, 6 Ponny's ♥ dos 812.00 and \$16.00 dls 65, 6 Appleton's ♥ dos 816.00 and \$16.00 dls 65, 6 Appleton's ♦ dos 816.00 dls 50, 60, 6 |
| " (Providence Tool Co | Penny's \psi dof \$14.00 and \$16.00. dis \$5 \times \text{Appleton's} \psi dof \$16.00, dis \$6\times 10 \times \text{Washers.} \text{-Sec Nuts and Washers.} |
| | Well Wheelsdis.dokic@rog |
| Brake Bros & Level Com., Varnished Hdlsdis 50210 S
Black Handlesdis 40210 S
dis 50210 S | Wire- Brass and Copper. List of June 10, 1880 |
| Gay's Double Action Ratchet Gay's Double Action Ratchet per dos. 4 lb., \$0.00; 4 ln., \$10.20; 5 ln., \$12.00 dis 30 % per dos., 4 lb., \$0.00; 5 ln., \$10.20; 6 ln., \$12.00 dis 40 % 10 % | Coppered |
| No. I dis com o No. 4 and co dis 30 | Cast Steel |
| Cowles Hdw. Co., No. 1 Extra. dis 40% to 5 (0, 1 dis 50% to 5 (0, 1 di | Galvanized Telegraph, Nos. 7 to 9 |
| Fist Head Brass | Fence Staples. No |
| Apanned, list of Plain Scr. ws | Stobs steel Wire. \$7.00 to E Japanned Barb Fence. \$7.00 to E Japanned Barb Fence. \$7.00 to E Japanned Steel Music Wire. Nos. 12 to 27. \$7.00 to E Japanned Steel Music Wire. Nos. 12 to 27. \$7.00 to E Japanned Steel Music Wire. Nos. 12 to 27. \$7.00 to E Japanned Steel Wire. Nos. 12 to 27. \$7.00 to E Japanned Steel Wire. |
| Bed | Turner & Seymour Mfg. Co. Picture Wiredis Sokso \$ fudd's Picture Wire |
| Wood Beech 9 dos \$3.00, dis to \$1.00 to | Wandha |
| Hand han, Sargent Reckley & Cos | American Adjustable |
| Screw Window Balances. | "Mechanics" dis solto s Pattern, Malleable dis 75 |
| Scroll Saws. | irard Agi7085 % |
| COMPARE #2.50 | semis & Cair's Fatent Combination |
| **hears and Scissors. dis 70&10 4 American (Casti iron | all wagoner & williams Basinper doz \$4.50
liken Pocket (Bright) |
| Seymour's, Liet, Nov. 25, 1879. dis 60&10 % dis 60 % of the control of the contro | Wringers. Per doz. Julyersat, XX No. 214 |
| Tailors' Shears | No. 1 (63.00) 71.00 No. 1 (71.00) 93.00 |
| Maing Door, M. W. & Co., list | NO. 12 |
| # Patent Roller dis 10 % 10 % 10 % 10 % 10 % 10 % 10 % 10 | eerleas, No. e, no Cogs |
| Russell's Anti-Friction dis costox 2 Principle Moore's Anti-Friction dis costox 2 Principle Moore's Anti-Friction dis costox 3 Moore's Anti-Friction dis costox 3 Moore's Anti-Friction discostor 3 | 10 No. 3, 11 |
| Shavels and Spades. mes. New list. July 1, 1881 | Wringers. Per doz |
| la Colony dis 1536 E | xceisior, No. & |

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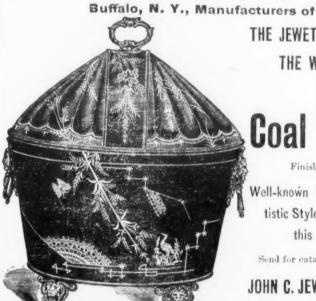
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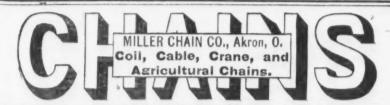
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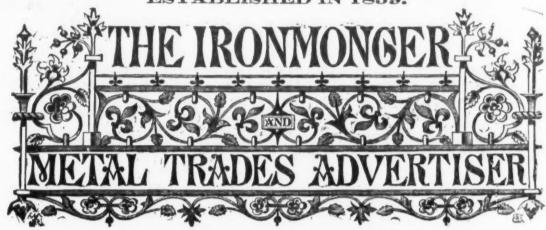
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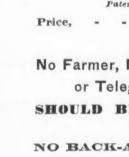
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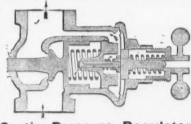
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Specials, Flange Pice, Retorts, Valves and Hydrants, Lump Posts, &c. The Improved Canadian Tur-blue Water Wheel Machinery and Castings for Furnaces, Rolling Mills, Grist and Saw Mills, Min-ing Pumps, Holsts, &c. Columns, Brackets, Iron Railings, &c.

Second and Chestnut Sts., Reading, Pa., and 74 Pine Street, New York City,

| PHILADELPHIA. | |
|--|-------|
| Corrected Weekly by Lloyd, Supplee & Walton.)
erms, 30 days. For 60 or 90 days, interest added at 10 | |
| Per cont. per annum. Anvila. Peter Wrights, # B | |
| | 92 |
| Penn Apple Parer | |
| A xes Hunt's Kentuckv and Yankee. per doz \$9.40 @ 10.09 Mann's Red Warrior | 6. 62 |
| Beveled Axesadd soc 'n net pouble Bit Axesnet 19.00 Augers and Auger Bits.—New List January 1. | 1 |
| Double Bit Axes | 1 |
| Benjamin Pierce Auger Bits. dis 35 % Griswold Auger Bits. dis 40 % Cook's dis | 1 |
| Bonney's Pat. Hol. Augers, list \$48 % doz. dis 2-&10%
Stearns' Pat. Hol. Augers, list \$48 % doz dis 2-&10
Balances.
Light and Common | |
| | |
| Swiss Pattern Hand Bellslow list dis 10%10 %
Connell's Door Bellsdis 20 %
Gt. Western & Kentucky Cow, new listdis 50 % | |
| Bells. Bevin Bros. Mfg. Co. Light Hand Pellsdis 65&to 6 Swiss Pattern Hand Bells | |
| Berins Machines. Upright, without Augers. | l |
| Botts.—Eastern Carriage Bolts | |
| Braces. — Barber's dis 40% \$ Backus dis 50 % Spofford dis 50 % dis 50 % \$ | |
| American Ball. dls 55 % Butta.—Cast Fast Joint, Narrow. dls 40% 10 % Broad. dls 40% 10 % | |
| Cast Loose Joint, Narrow dis 50&10 % Broad dis 50&10 % " Acorn, Loose Ph dis 50&10 % | |
| Mayer's Loose Joint dis 55&10 & dis 55&10 & dis 50&11 & dis 50&11 & dis 50&11 & dis 50&10 10 & dis 50&10&10 & dis 50&10&10 & dis 50&10&10& dis 50&10&10& dis 50&10& dis 50&10& dis 50& | 1 |
| Narrow Fast dis 44210 \(\) | |
| Parker dis 70 % Clark dis 70 % dis 70 | |
| Huffer's dis 50 % Chalus.—German Halter and Coll. new list Oct. 22, | |
| Galvanized Pump. Galvanized Pump. B 50&10 % Galvanized Pump. B 50&10 % Hest Proof Coil Chain—English. B 50&10 % Hest Proof Coil Chain—English. Coil Chain—English. Hest Proof Coil Chain—English. Coil Chain—English. Coil Chain—English. Hest Proo | |
| Huffer's | 1 |
| Plate dis roles of | 1 |
| Coffee Mills.—Box and Side, new list Jan. 1, | |
| Enterprise. Cutlery. — Walden Pocket | |
| Brawing Knives.
Hart Mig. Co.'sdis 65&10 ⊈ | |
| Adjustable Handle | |
| Tinned. © doz.83.00 4.00 4.50 5.00 5.40 5.50 7.50 9.00 10.00 No. 0 2 3 4 5 6 Burnished | |
| | |
| Files | 1 |
| Finting Machines. Eagle—3\(\frac{1}{2}\) in rolleach, \$2.15\(\frac{1}{2}\) dia 2.5 | l |
| Earlie State Color Col | l |
| Favorite com Fluter & Sad Iron doz \$10.50 net | ı |
| Hammers. Yerkes & Plumb's, new listdls 30 % Dandles. Boynton's Pat. Saw Handles360 per pair net. | |
| Hatchets. Yerkes & Plumb, new list | |
| Hinges. dis 45&10&10 % Btrap and T | |
| Hinges Strap and T | |
| Clinton. 23 20 19 18 17 2 20 20 19 18 17 2 20 20 19 18 17 2 20 20 19 18 17 2 20 20 20 20 20 20 20 20 20 20 20 20 2 | 1 |
| | |
| Cocks and K. Bobs. dis 45&2 € Gaylord Cabinet dis 25&2 € cash American Padiocks dis 62 & € cash Gaylord Cabinet dis 62 & € cash Gardinavian Padiocks dis 62 & € cash Gardinavian Padiocks dis 62 & € cash Gardinavian Padiocks dis 63 & € dis 60 & € di | |
| No | |
| Lanterns. Square Candle and Oil | |
| Globes, 35 cents extra per doz. net. Lawn Mowers.—Pennsylvania | |
| Lawu and Garden Pumps. Hohand Patent | |
| Mattocks. Long and Short Cutternew list35 # | |
| Moissaste Gates. Enterprise Mix Co 's Measuring Faucets. dis 30 % Steeblins Gates. dis 80 % Lincoln's Landers, Frary & Clark's Petroleum. dis 20010 % Brass Liquor Cocks, new list Jan. 1 1985. dis 30 % Cork Lined | |
| Lincoln's dis socios dis socios dis socios dis socios dis socios de Brass Liquor Cocks, new liss Jan. 1 188s. dis 10 % Cork Lined | |
| Meat Cutters.—Penns'vania sicat Cutter dis 40%10 % Dixon's | |
| Cork Lines | - |
| Stuffers. dis 30 % Enterprise Stuffers. dis 30 % Planes.—Ohio Tool Co. dis 30 % | - |
| Enterprise Sculers | 1 |
| Pinne irons.—Ohio Tooi Co | |
| Plumbs and Levels. | |
| "Non-Adjustable dis 6&210 S PlcksNew list. \$5.00, dis 7 S PumpsBickford. \$5.00, dis 10 S RulesStanley Boxwood dis 70 to 2 Stanley VordStanley Horse dis 0.00 S Steer wards. \$1.00 Profits Libs. \$0.00 Iso 200 250 250 American Pattern dis 30% 500 American Pattern dis 30% 500 American Pattern dis 30% 500 | |
| # doz \$14.50 17.75 2100 26.50 3100 35.50 Lbs 40 100 150 200 250 300 American Pattern | 1 |
| M doz\$8.00 10.25 13.75 14.60 16.75 19.50 Lbs 40 100 140 200 250 300 | |
| Steel and Iron | 1 |
| and Sharpened. and Sharpened. 1 |
| Cupper No. 5, Faibted Red, Boxed and Sharpened. P doz \$8.00 net Saws. Disston's Hand, Panel and Ripdis 20 % | 1 |
| Saws.—Disston's Hand, Panel and Rip. dis 2c 5 Disston's Circular. 2, Plain Tooth. dis 4c 5 Cross-Cut No. 2, Plain Tooth. dis 4c 5 Patent Tooth. dis 4c 5 Champion Tooth. dis 4c 6 Boynton's Lightning Cross Cut, new list. dis 2c 5 Champion Tooth. dis 4c 5 Lightning Buck Saws, cross bar dis 2c 5 Lightning Buck Saws, cross bar dis 2c 5 Hand, Panel and Rip. dis 2c 5 Shovels and Spades. | 1 |
| Boynton's Lightning Cross Cut, new listdis 20 % One Man, all lengths, "dis 20 % Billet Webs, 20 inch, "dis 25 % | 1 |
| Hand, Panel and Ripdis 25 Shovels and Spades. Oliver Ames & Sons. new list | 1 |
| Grimths | - |
| Griffiths | 1 |
| No. 2. 180 Slids 450 Axe 120 120 not | 1 |
| "Slips "450 Axe Turkey Oil Stone No. 1 " " " " " " " " " " " " " " " " " " | - |
| | |

| | T | |
|--|--|-------|
| T | Screws. | |
| - 1 | Screws. dis 3t s Flat Hoad Iron dis 3t s Brass dis 35 s Bound Head Brass dis 25 s Iron dis 35 s Speons dis 35 s | |
| 10 | Spoons. Classes dis as she s | 36 |
| 10 | Specins | 5 |
| 10 % | Tinned. Parker's | 7-3-5 |
| 50 | Philadelphia (in., \$5.00; 8 in., \$7.75 # dos. dis 25 % Chatfield No. 1, \$2.75; 2, \$2.25; 2, \$5.00 # dos. dis 33/5 % | 50 |
| 50 | Tinned | |
| 03
\$0 | Stocks and Dies | 0 |
| et | Dixon. 6.00, dis 10%
Onyx. 4 \$4.00 @ 4.25 net | 5 |
| .00 | Tacks | 7- |
| NAN | Traps. Genuine Oneida—Newhousedis 35 % | 11 |
| 2 | Vises.—Solid Box. Trenton new list | 2 |
| 3% | Praps Genuine Oneida Newhouse dis 35 % Im. Oneida Newhouse list, first qual dis 55 % Visea Solid Box Trenton new list dis 56 % Wrenches Agricultural dis 70% 5 % Coes' Genuine dis 50% 5 % dis 50% 5 % dis 50% 5 % dis 50% 5 % Philada Tool Co., Duplex dis 26% 5 % Wire dis 26% 5 % | A |
| 01: | Philada. Tool Co., Duplex | |
| 80 | Wire. Bright or Ann'd, No. o to 18 | T |
| 25 | Coppered. o to 18 | |
| 3.0 | Gaivanized No. 7 to 18 Market List, dis 42% to 45% Wringers. Peerless No. 2%. | AF |
| 5 % | Universal, No. 216. | P |
| 8 | Universal, No. 246.
Novelty, No. 10. | ST |
| 3 % | | POR |
| 2 % | PITTSBURGH. | STFF |
| 2 % | Merchant Iron. | |
| 5% | TERMS Note or acceptance at 60 days, with current
rate of exchange on New York, or a discount of 2 per
cent. For cash, if remitted within 10 days from date of | 8 |
| % C % C % C % C % C % C % C % C % C % C | For fluctuations and discounts | E |
| 0% | on card rates see weekly Pitts- | E |
| 0% | burgh Trade Report. The following are card rates. | 0 |
| 20 | Flat Bar. | i |
| 0% | 154 to 6 by 154 to 154 " | 8 |
| 0% | 114 to 4 by % to r inch | 7 |
| 0 %
0 % | t to 174 | E |
| iet | 78) 78 and 38 by 78 by 81 by 82 and 58 guares. 1 to 174. 2.50 94 to 9-16. 2.70 2 to 294. 2.70 94 to 7-16. 2.80 24 to 394. 3.50 98. 3.10 34 to 34 5.50 1.66 3.30 44 to 4 5.50 1.66 3.30 45 to 34 0.00 1.60 5.50 46 to 5 0.00 1.60 5.50 | 8 |
| old og | % to % 4.0c 3.6c 3.16 3.6c 5.5c | 1 |
| o % | 76 to 116 | 日本の |
| 5% | ### Half Oval and Half Round. 74 to 154 Inch | F |
| 5% | | F |
| let
læ | % to 1½ by 5-16 to ½ luch. 3-50 Wagon Box Iron. 74 Inch, Nos. 13 and 14. 3-70 75 " " 11 and 12. 3-50 | CEC |
| ıu- | % " 13 and 14 100 | 6 |
| 0 % | 94 11 and 12 | 1 |
| 5% | Heavy Bands. 4.10 | F |
| 5 % | 126 to 334 by 34 and 5-15 | 4820 |
| 0 % | 28 and 28 0y 24 and 5-10 | 80 |
| 0% | 1½ to 6 by ½ to 3.16 | 7 |
| 0 %
0 £ | 1 to 1% by Nos. 11 and 12 | F |
| 5% | % and 11-16 by 16 to 3-16 | 1 |
| 5 % | 1/6 to 0 by Nos. 11 and 12. 3 to 1 to 1/6 by 1/6 to 3-16. 3-16. 3-16 to 1/6 by Nos. 11 and 12. 3-16 to 1/6 by Nos. 11 and 12. 3-16 to 1/6 and 13-16 by Nos. 11 and 13. 3-16 to 1/6 and 13-16 by Nos. 11 and 13. 3-16 to 1/6 by 1/6 to 3-16. 3-16 to 1/6 by 1/6 to 3-16 to 1/6 to 1/ | F |
| 5% | inch by Nos. 11 and 12 | 000 |
| s % | 154 to 2, Nos. 15, 14 and 16 | F |
| 0% | 14 to 2, No. 19. 30. 114 to 2, No. 30. 30. 30. 30. 30. 30. 30. 30. 30. 30 | 20 00 |
| et. | 154 to 2, No. 22 | E |
| 0 % | 15-10, 1, and 196, Nos. 13, 14 and 14. 5.00
15-16, 1, and 196, Nos. 16, 17 and 18. 5.00
16-16, 1, and 196, Nos. 19 and 20. 5.70
14-16, 1, and 196, No. 21 5.00
15-16, 1, and 196, No. 22 5.00
5, Nos. 13, 14 and 15. 5.00 | - |
| 0% | 15-10, 1, and 134, No. 22. 3-90
74, Nos. 13, 14 and 15. 3-70
74, Nos. 16, 17 and 18. 3-80
76, Nos. 19 and 20. 3-90 | 1 |
| 10 | % Nos. 19 and 20 | 2 |
| 23
20 | 13-16, Nos. 16, 17 and 18 | 8 |
| 17
18
18 | 13-16, Nos. 19 and 20. 4.10
13-16, No. 21 4.20
13-16, No. 22 4.20 | |
| 10% | 54, Nos. 13, 14 and 15. 4.30
54, Nos. 16, 17 and 18 4.00
54, Nos. 16, 17 and 20 4.10 | I |
| ah
sh | 74, Nos. 19 and 20. 4.20
15, No. 21 . 4.30
74, No. 22 . 4.40 | I |
| 0% | 56, No. 21
34, No. 22
11-16, Nos. 13, 14 and 15.
11-16, Nos. 15, 17 and 18
420
11-16, Nos. 19 and 20.
11-16, No. 21.
11-16, No. 22.
56, Nos. 13, 14 and 15.
56, Nos. 15, 14 and 15.
56, Nos. 15, 17 and 18
420
56, Nos. 15, 17 and 18 | E |
| 0% | 11-16, No. 21. 4.10
11-16, No. 22. 4.50 | ١, |
| | 96, Nos. 13, 14 and 15. 440
96, Nos. 19, 17 and 18 450
68, Nos. 19 and 20 450 | |
| et | \$6. NO. 21 | - |
| ist % | 9-16, Nos. 13, 14 and 15 | 1 |
| 0% | 4.90 | i |
| c d | 9 16. No. 22 5.00
9-16, No. 23 5.00
\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | 3 |
| 5 % | Nos. 16, 17 and 18 | 3 |
| 0 % | 12 " No. 22 | 3733 |
| 0% | The prices under Hoop Iron do not apply to Cotton Ties. | 1, |
| の第一の第一の第一の第一の第一の第一の第一の第一の第一の第一の第一の第一の第一の | 1-10c per ib. extra will be charged for each gauge lighter than the lightest indicated. 1-10c per ib. extra will be charged for cutting floops to specified lengths. | 1 2 |
| 0% | Rarrel Hoone | 2 |
| ah
S S | 14 to 2 in., cut to length. to 11 lbs, per set of 6 hoops. 8 lbs, and less than 2 lbs, per set of 6 hoops. 3.5c Less than lbs, per set of 6 hoops. 3.5c | 3 |
| 0 % | Extras for Cutting to Length all Preceding Iron. | 3 |
| 2000 | All Iron, including Tire | 8 |
| 0% | Plow Slabs. 3.50 " Wings. 3.60 Sheet Iron. 3.80 | 1 |
| -50 | No. 10 to 14 Common. Charcoal. Juniata. | |
| 00000
NWWW | No. 18 to 17, | |
| 0% | NO. 25 06 20 | |
| 0 % | No. 20 | 1 |
| 0.5 | Wood's Putent Planished Sheet. | 1 |
| 00 | Nos. 14 to 20 | 1 |
| 0 % 0 % | Nos. 25 and 26 | 1 |
| net | 134 by 56 by 6-163.00 1 by 56 by 6 163.50 Angle Iron. | 1 |
| aet | 236, 3, 356 and 4 lnch | 1 |
| et
of | 114 by 1 in th, for Plow Handles 3.00 | 1 |
| 40%
40% | All sheets No. 18 and lighter, over 30 inches wide, not less than 2.100 extra. Wood's Fatent Planished Sheet. 1st quality (A) 10\sec 2 quality (B) 0\sec Galvantzed C. H. B.—Charcoal Hammered Blooms.) Nos. 14 to 20 12 No. 27 15 No. 21 to 24 13c No. 20 15c Nos. 25 and 26 13c No. 20 15c Nos. 25 and 26 13c No. 20 15c Nos. 25 and 26 13c No. 20 15c Coursent discount, 30 % or 3x %. Current discount, 30 % or 3x %. Course Serven Iron. 1\(^1\) \(| 1 |
| 40%
0 % | 136 by 36 | 1 |
| 5% | Splice Joints for 12, 16 and 20-lb. Rail, 400 each; 28 and 30 lb. Rail, 50a 63ch; 40 lb., 60c each. | 1 |
| 5% | 3% by % and % Spikes for 20 and 28-lb. Rail | 1 |
| 0% | Flat Rails.—Punched and Countersunk. | 1 |
| o % | Flat Ratls.—Punched and Countersunk. 14 to 2 by 14 to 26 inch | 1 |
| 18c | Juniata Nail Rode | - |
| 360
180
450
450
net | Juniata Nail Rode. 6.40 Norway 6.40 Guard Iron 3434343 and 3433436 4.00 Drag Bars 1,20 Drag Bars 320 Cylinder and Landaide Iron 3.50 | - |
| 0 % | Dropper Bars 350
Cylinder and Landaide Iron 320 | 1 |
| | Plow Beam Iron 2 ****************************** | |
| | | |

| T | HE IRON AGI |
|---|---|
| dia 35 %
dia 35 %
dia 25 % | Nalls. See Pittsburgh Trade Report. Best Quality Refined Cast Steel. |
| das 30 % | Square, Flat, Octagon and Round. |
| dis 65&5 %
dis 65&5 %
dis 10 % | 5-16 and 2/5 to 3 Inches |
| .dis 40, 5&x 4 dis 30, 10&x 5dis 65&5 5dis 55&5 5dis 50 5 dos \$2.10 10 5 dos. dis 25 5 los. dis 33/5 5 | Well Steel Forgings |
| 2.75 25810 %
2.00 | Bessemer & |
| dis 10& 5 %
&4.50, dis 5 %
6.00, dis 10%
dis 30&10 %
dis 30&10 %
dis 40&5 % | Ordinary Sizes, % to 2 inch Crucille. Open Hearth Round 6 %c 5c 5 to and 2 % to 3 inches 7 %c 6c 5 and 3 % to 6 8 %c 7c 7 32 inch 0 %c 8c 3 15 11 ½c 10 c |
| | 3-16 Get se
3-16 Index 100 Square, Flat and Octagon, 15c extra throughout the list. |
| dis 35 %
dis 55 %
dis 70&5 % | Cut to specified lengths, Mc extra. |
| dis 70&5 %dis 50&3 %dis 50&10 %dis 75 %dis 20&5 % | ### Hammer Cast Steel. 2 inches and under |
| dia 2085 % | Best. 2d Qual. 3d Qual. Open Hearth. To 21 gauge 110 or 7 % 6c 1c. extra for each additional gauge. Cut to multiples or specified longths, 1/4c. extra. |
| Is so to 5214 % Its 5714 to 60 % Is 6214 to 65 % Is 4714 to 50 % Is 5214 to 55 % Its 5214 to 45 % | Cut to multiples or specified lengths, %c. extra. Miscellaneous Cast Steel. |
| ******* | Miscellaneous Cast Steel. Auger and Auger Bit. . |
| ******** | Pick, plain |
| ****** | Pike and Cant Hook. 75c
Coal and Granite Wedge. 75c
Roller 85c |
| | Spindle, subject to Machinery classification oc
Trap Spring Steel oc
Forged Crank Pins and Lathe Spindles 6c |
| with current | Spindle, subject to Machinery classification. 2c Trap Spring Steel. 2c Forged Crank Pins and Lathe Spindles. 3c Floton Rods, plain. 3c Floton Rods, plain. 3c Slide Bars, plain. 3c Forged to shapes. 3c Crucible, Open Hearth or Research |
| ount of 2 per
from date of
iscounts | Bottler Fire Boy and Flue Ch. |
| y Pitts- | Boiler, Fire-Box and Flue Sheets not less the |
| | thick |
| | Square, Round, Half Round and Flat Bastard, 8, |
| 2.90 | Square, Round, Half Round and Flat Bastard, 8 inch and over by Shiph and over by Shiph and over by Shiph and Shoe Rasp. |
| 2.70
2.90 | Spiral and Taper, cut to lengths |
| 3.30
3.50 | Tire Cast Steel. |
| 3.30 | IX's and over IX's and over IX's and sover IX's and IX's to IX |
| 4.oc | Fork and Rake, Crucible |
| 3.50 | Beveled Hoc and Shovel Steel in Bars. 74cc
Crucible Plow Steel in slabs 75cc |
| 3.5C
4.0C
3.8C | Bessemer and Open Hearth. 6c |
| 4.4C | Spring |
| 2.70
2.70
2.80 | roe Cark 45cc Axle Billets 45cc Axle Billets 45cc Steleh Shoo cut to lengths and tapered 40cc Scyths Back 45cc Grain Drill Bit 80cc Grain Drill Bit 80cc Rolling Coulter Blanks, cut and punched 55cc Thrasher Steel 45cc |
| 3.40 | Grain Drill Bars. 4c Points, 74c Rolling Coulter Bianks, cut and purposed 85cc |
| 3.10
3.20
3.40 | Rolled Hammer Billes |
| 3.50
3.70
3.80 | Relis and Castings. |
| 4.1C
4.3C | Furnace, Floor and Straightening Plates. Housings and Castings not otherwise specified. Guide Plates |
| 3.30 | Sand Rolls and Pinions, large size 3 C |
| 3.50
3.60
3.70 | Spur and Bovel Wheels, large 5 lbs 5 C
Pulleys up to 20 Inches amail 334C |
| 3.8c
3.5c
3.6c | over 30 inches. 454c
Engine Castings, light. 154c
heavy. 45cc |
| 3-7c
3-9c
3-9c
3-7c
3.8e | Chitted Rolls, 6 to 7 in. diam., 7 to 20 in. long. 8 to 15 in. 6 8 to 40 in. 6 90 10. 6 90 |
| 3.90
4.00 | 72 to 108 in. 4 100 108 in. 4 100 |
| 4.00
4.10 | Strictly Pure White Lead in Oil, in kegs, 7c.: in 2s B Tin Pails, 2sc. & B over keg price; 12% B Tin Pails, 1c & B over keg price; 12% B Tin |
| 4.30 | Red Lead, very brilliant, in keep and in house, 70 |
| 4.20
4.30
4.40
4.20 | from date of at sixty days, or if paid within as days |
| | Window Glass. |
| | Per Box of 50 Feet.—Discount 60& 10 % on single strength, 60& 30 % on double. Single Strength. |
| 4.70
4.80
4.90
4.60 | Size. AA. A. B. C. |
| 4.7C | |
| | 26 x 36 to 26 x 44 |
| | 70 X 56 to 34 X 56. 17.25 15.50 13.60
34 X 58 to 34 X 68. 18.25 17.25 15.00 |
| ply to Cotton
each gauge | Double Strength. 6 x 8 to 10 x 15 |
| utting Hoops | 15 X 36 to 24 X 30 |
| ps3.50 | 90 X 56 to 34 X 56. 27.75 26.00 21.75 |
| ding Iron. | 36 x 60 to 40 x 60 |
| 3.3C | An additional 10 per cent, will be charged for all glass more than 40 inches wide. All sizes above 50 inches in length and not making more than 81 united inches, will be charged in the 84 united inches bracket. |
| al. Juniata. | 1280 35 |
| 6.50
6.80
7.10
7.30 | STATES OF CA |
| 7.50
7.70
8.10
inches wide, | CALCUMO A |
| et. | Child of X |
| arrowalls.) | |





From 5 to 30 Tons. No Repairs, Packing or Alcohol. NEVER RUNS DOWN UNDER THE LOAD.

Handler, stronger, longer lived and cheaper than any hydraulic jack. GEO. A. OHL & CO., East Newark, N. J.

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SHEET IRON WARE,

Patent Corrugated Bottom Coal Hods, PATENT ACME FRY PAN Edgar's Patent "Gem," "Victor," "U. S.," "Climax" and "O. K."

POLISHED FRY PANS, &c. Stove Shovels.

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THE "COLUMBUS" SOLID STEEL SCRAPER.



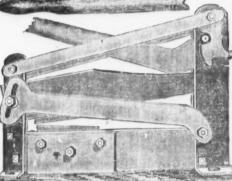
THE PERFECT SCRAPER,

Made from one sheet of Steel, 3-16 of an inch thick, PRESSED into shape. It is without Seam, Joint or Rivet, and is the Lightest, Strongest and most Durable Scraper made. Fills easier and cleans better than any other, and there is nothing about it to get out of repair. We also manufacture the well-known

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REVOLVING SCRAPER CO., Columbus, O., U. S. A.

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PUNCH ATTACHMENT, FOR IRON AND STEEL.

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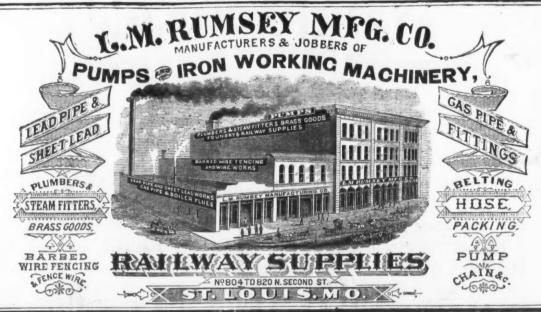
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BOLT CO., Lowell, Mass.,

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WM. A. CLARK'S PATENT EXPANSIVE BITS WITH TWO CUTTERS EACH

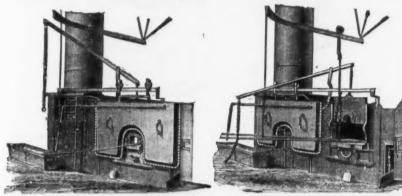
Small Bit Boring from 1/2 in. to 11/2 in.; Large Bit Boring from 1/4 in. to 3 in. Made of Jessop's Cast Steel, and Parts Interchangeable WACLARK'S PATENT

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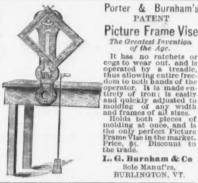
Patent Plain Back Solid Shovels and Spades, Back Strap Shovels, Spades and Scoops.

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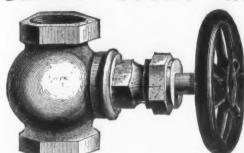
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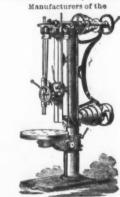
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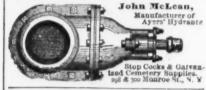
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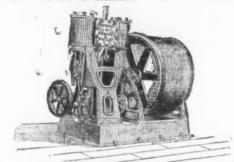


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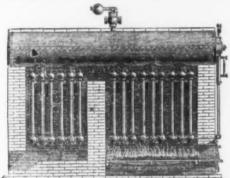
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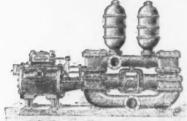
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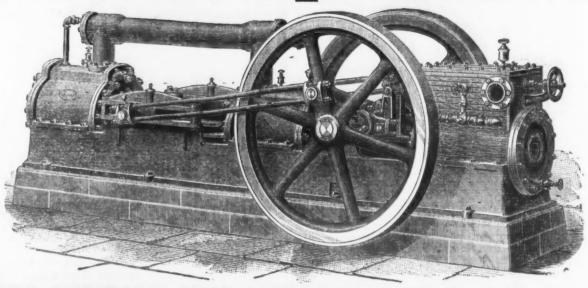
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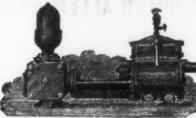
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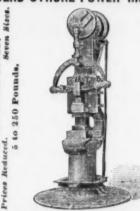
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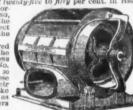
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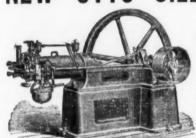


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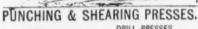
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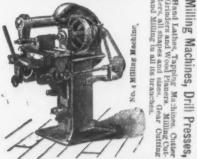


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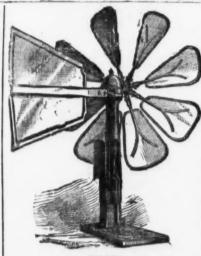


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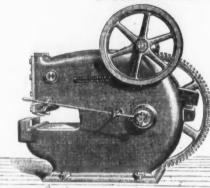
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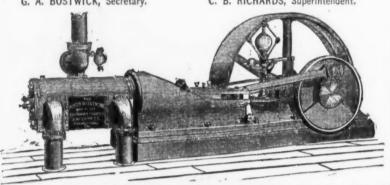
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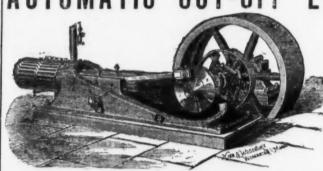


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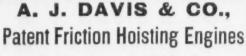
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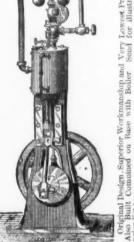


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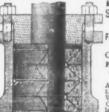
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